Illini Union Facility Study

Final Report | Project #PSSU16058 | February 8, 2017

Dewberry WORKSHOP

We would like to acknowledge the Core Committee, the Staff Visioning Committee, the Student Visioning Committee, and all of the other students, faculty, and staff who participated in the development of the Facility Study.

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Executive Summary

Executive Summary

In shaping this strategic vision for a revitalized Illini Union, the imperatives are to align this iconic facility with the aspirations of a truly international world class university, reflect the values and diverse character the UIUC campus community, and to leverage the Illini Union's historical significance, central location, and value as a place that embodies the UIUC experience. It is in this spirit that this master plan is submitted.

These recommendations are based on insights garnered through intense discussions, workshops and meetings with over 60 members of the Illini community over four months, in addition to an online survey to which 668 people responded.

The overarching vision that students, faculty, staff, and alumni all share for the Illini Union is that it should be a place that builds community, welcomes people from all walks of life, bridges across boundaries and interests, and remains a point of pride for the campus.

To fulfill this vision, the Illini Union must be a place to:

1. **Build friendships and bridge across cultures, disciplines, and interests.**
   The Illini Union should provide opportunities to form lasting friendships and to create connections with people from all walks of life, including different countries, cultures, majors, and intellectual endeavors. For all students, but especially so for UIUC's large percentage of international students, the Illini Union should be a "Union Without Borders."

2. **Promote leadership, involvement, expression, and finding one's niche.**
   The Illini Union must feature a state-of-the-art student involvement hub in order to accommodate an already highly engaged, energetic, and idealistic student body.

3. **Serve as a point of welcome, central gathering place, and source of campus pride for students, faculty, staff, and alumni.**
   Already a campus icon, the Illini Union is uniquely situated to build upon its status as demonstrably the most significant place at UIUC to be the primary choice for campus tours, meetings, events, and visits.

4. **Recreate, relax, and revitalize.**
   UIUC students want the Illini Union be a place for entertainment and cultural enrichment (especially movies and live music), relaxation (through games and comfortable furnishings), and revitalization (especially through physical activity and healthy food choices).

5. **Concentrate and study while maintaining social connections.**
   UIUC students look to the Illini Union to be a place where they can concentrate, collaborate, and study.

The specific rationales for these priorities are enumerated within the body of this master plan. They lay the foundation for a revitalized Illini Union that will be wholly unique and highly responsive to UIUC's needs in terms of scope, social and educational functions, and all-important goal, as stated in the Student Affairs Strategic Vision, to be "global leader in transforming students' lives." In practical terms, implementing this master plan will increase student visits, foster new relationships across campus, improve recruitment and retention, welcome alumni back to campus, and generate additional revenue.

In broad strokes, the architectural implications are these:

- The Ilini Union ranks close to last in comparison to peer institutions in terms of amount of usable program spaces per student. This proposal brings the Ilini Union close to space parity in a number of key functions.
- It adds 88,853 gross square feet, which would bring the total to 422,730 gross square feet (GSF).
- Virtually all of the original 143,000 GSF in the north building and the 133,000 GSF in the south building are retained. This design replaces the center portion of the building, which includes the existing basement and first floor connection with a 131,000 GSF newly constructed center infill that consists of a basement and three new floors.
- While preserving the existing historic fabric of the Illini Union, this vision rectifies the most glaring functional problems that have hindered its mission over many decades. These include hidden and outdated food and recreation spaces, old restrooms, a lack of meeting and event spaces, difficult access into the building at the north entry, awkward wayfinding and a lack of connections at upper floors, and undersized and rigid student involvement spaces.
- The key program priorities identified here include: enhanced student involvement hub, cafe, variety of meeting and greatly enlarged event space, healthy food options served in comfortable "micro-restaurants," enhanced recreation and restoration facilities (including fitness center, watching movies and sports on a large screen), a venue for live music, spaces for multi-cultural events, outdoor dining and lounge space, and places for quiet study.
- The top design priorities are to create: better accessibility into and throughout the facility, clear wayfinding and floor-to-floor connections, strong connections to the Quad and to other outdoor spaces, a welcoming first floor experience, internal vistas that foster energizing encounters and create awareness of what the Union has to offer, and more daylight and new views to the east and west. Architectural

changes must also complement the historic character of the existing building.

- The design solution delineated in this report replaces the center portion of the building, which includes the basement and first floor connection, with a newly constructed center infill that consists of a basement and three new floors. Key features include:
  - Lower Level—Entertainment Hub: Theater for movies, lectures, and live performance; student programming space and restaurant space for live music, dancing and watching sports on a large screen; fitness center; retained bowling lanes and game space, and an optional two levels of underground parking.
  - Main Level—Dining and Lounge: Two-story cafe space; lounges with fireplaces and outdoor connections, micro-restaurants and retail spaces; quiet study spaces; destination dining venue; preserved North and Quad Lounges; enhanced outdoor lounge space.
  - Second Floor—Student Involvement and Support: Cafe space (connected to first floor); state-of-the-art student involvement hub with space for student organizations and collaboration; study space; flexible meeting space for Student Senate and other groups; marketing and administration space; and space for student support functions.
  - Third Floor—Premier Meeting and Event Space: Greatly enlarged Illini Rooms and pre-function space; variety of additional meetings spaces; catering; retained hotel rooms rooms facing Quad.
  - Fourth Floor—Hotel and Meetings: Refurbished and freshly branded hotel rooms, additional meeting rooms, and administration space.
- A combination of skylights, transparent walls, elevators, and connecting stairs and walkways fulfill the programmatic and design priorities described above. The design is boldly contemporary, yet honors the existing historic structure.
- The estimated construction cost of all components of the design (new construction, renovation, and site development) without additional parking is $105 million. Adding the optional two floors of underground parking brings the total to $114 million. Additional soft costs, figured at 2.16 times construction cost, bringing the total project cost, including two levels of underground parking, to $246.8 million.
- The project timeline assumes that the project is approved by a student referendum in spring of 2018 and later that year by university administration. Construction would proceed in two phases: construction of the center infill and south building renovation, followed by north building renovation. The estimated time of construction would be 28 to 36 months. Beginning construction in 2022 would culminate in a grand opening in 2025.

Programming

Imagining the Future Role of the Illini Union

Imagining the Future Role of the Illini Union

Reason for Study
First opened in 1941 for a campus of 12,000 students, and substantially enlarged in 1960 for a population that approached 30,000 students, today's Illini Union now serves UIUC's 44,000 students and over 10,000 faculty and staff. Beyond the significant increase in campus population, substantial changes in campus culture, evolving technologies, and shifting institutional priorities require a fresh look at the future roles for the Illini Union in order for it to be considered a premier student union.

Methods Summary
The methods used in this study were intended to develop a fuller understanding of the UIUC campus community from the perspectives of students, staff, and faculty, and to explore the ways in which the Illini Union could be positioned to enhance campus life.

Specific data gathering methods included:

- 75 Student Intercept Interviews Across Campus
- Campus and Illini Union building tours
- Structured and open-ended interviews with student groups, faculty, administration, staff, and alumni, including eight functional area meetings (50 participants)
    - Four student focus groups (20+ participants)
    - Four faculty/staff focus groups & one visioning session (30+ participants)
    - Monthly core group meetings (seven participants)
- Two of each the following workshops held with students, faculty, staff, and alumni
    - Priorities and relationship workshops
    - Concept studies workshops
    - Concept development workshops
- Campus Capital online survey (689 respondents)

Initial Impressions from Campus Stakeholders:
The Illini Union is a great place and the heart of campus, but it falls short of the high aspirations that many members of the campus community have for it. Among the immediate shortcomings are:

- The Illini Union faces stiff competition from other campus venues and private sector facilities for meetings and events. There is a strong desire for the Illini Union to be a state-of-the-art venue for members of the campus community to hold events.
- Access into the building, especially at the north entry, is difficult for everyone, but especially so for people with disabilities.
- The building layout is confusing. The lack of physical connections between the north and south buildings at upper floors means that people attending meetings and events on upper floors have difficulty finding their way.
- While the North Lounge, South Lounge, Courtyard, and first floor study areas are much appreciated by students, other common spaces, such as first floor hallways are dated, lack vitality and fail to convey the message that the Ilini Union is for everyone.
- Dining on the lower level is perceived as hard to find, out-of-date, and lacking daylight. Recreation spaces are also difficult to find.
- Student involvement spaces are considered undersized and rigid, and moreover, are not up to the task of serving students who seek a higher level of engagement on campus and to have an impact on the world.

Imagining the Future Role of the Illini Union

Vision for the future of the Illini Union

The vision is informed by the following characteristics that are unique to university, campus community, and the Illini Union building:

University: The standards for excellence at a world-class university like the UIUC are necessarily high. Student Affairs at Illinois aspires no less than to be "the global leader in transforming students lives." At the same time, the vision for the Illini Union is to be "the premier college union."

Community: The UIUC community is both idealistic and principled. Its students value diversity and inclusion, making a difference on campus and in the world, and freedom of speech and association. UIUC is also a truly international community. It has the second largest population of international students on any public campus in the US, and enrolls more students from China than any other U.S. university.

Building: UIUC students recognize the intrinsic value of the Illini Union as a social hub, a place to learn, a place to relax, and source of campus pride. From its central location, to its historic architecture, and as the northern anchor to the beloved Quad, the Illini Union is uniquely poised to meet UIUC's highest aspirations.

Based on the numerous discussions, focus groups, interviews, survey research, and feedback on programmatic and design strategies presented in different workshops, one particular overarching theme for the role that the Illini Union should play on campus emerged. Students and other members of the UIUC community want the Illini Union to be a place where they can bond with friends and meet new people, to welcome people from all walks of life, and bridge across boundaries and interests. For all students, but especially international students, the Illini Union should also be a place for cultural exchange and meeting people from around the world. In short, to live up to expectations of the UIUC community the overarching vision for the Illini Union is that it should be a "union without borders."

What does it mean for the Illini Union to be a "union without borders"? It must be a place to:

1. **Build friendships and bridge across cultures, disciplines, and interests.**
2. **Serve as a point of welcome, central gathering place, and source of campus pride for students, faculty, staff, and alumni.**
3. **Promote leadership, involvement, and finding one's niche.**
4. **Recreate, relax, and revitalize.**
5. **Be a place for students to concentrate and study while maintaining social connections.**

1. Build friendships and bridge across cultures, disciplines, and interests. The Illini Union should provide opportunities to form lasting friendships and to create connections with people from all walks of life, including different countries, cultures, majors, and interests. In both the focus groups and survey, students made clear how much they value social connections and diversity on campus and moreover, that the Illini Union has an important role in facilitating social cohesion and bridging across different groups. Students believe that the most important roles for the Illini Union are:

- Diversity, inclusion and welcoming people from all walks of life (58% "very important," 31% "somewhat important")
- Bonding with friends & meeting new people (50% "very important," 36% "somewhat important"

Comments from members of the UIUC community also reflect the strong desire for the Illini Union to play a role in nurturing and inclusive community.

"I think this would be a great opportunity to meet people and this would make it more fun and less awkward when meeting people. This will help us see that many people might have the same interests."

"This building needs to be inclusive. Every person who walks into it should be able to recognize themselves."

"We want to make sure the building is accessible for people with all kinds of disabilities. Make accessible features better. Go above and beyond the minimum."

"The Illini Union should be true to its name. It should be a place where all students can come together in union and feel accepted and welcomed."

"It's really the one place where everyone on campus will visit during their time at UIUC. It should remain a place of inclusion for all."

This desire also extends to the more than 12,000 international students who comprise about 23% of the total student population. International students who responded to the online survey overwhelming agree that facilitating "cultural exchange and meeting people from around the world" should be a critical role for

a revitalized Illini Union. In fact, 85% of international students rated this as the highest among all potential roles presented, with 54% calling it “very important” and 31% saying it is “somewhat important.” Furthermore, half of all survey respondents (50%) said that holding multicultural events is a key activity for the Illini Union to fulfill its mission.

“It is important to create an environment where international students feel part of the community.”

“This should be open space for those willing to participate in learning other cultures and viewpoints.”

“I love the bustle of all different types of people there.”

2. Promote leadership, involvement, expression, and finding one’s niche. The Illini Union must feature state-of-the-art student involvement space in order to accommodate an already highly engaged, energetic, and idealistic student body. “Make a positive impact at UIUC and the world” was among the highest priorities for survey respondents (46% very important, 31% somewhat important). In addition, “freedom of speech and association” was deemed by nearly three out of four students to be an important role for the Union (41% “very important,” 32% “somewhat important.”

However, the existing registered student organization space at the Illini Union is inadequate to the task of fulfilling these priorities. There are approximately 1,400 such organizations on campus, while only about 60 to 70 can be accommodated.

The registered student organization (RSO) space is seen by many as cramped and rigidly organized into immoveable cubicles. In discussion and in the online survey, participants expressed the need to have a better place for spontaneous collaboration, to incubate ideas, and to encourage student involvement.

“One of the biggest areas I think we could improve is our RSO complex. I have visited a few others schools and they have significantly better RSO complexes, whereas in our school it seems like we are very cramped.”

“Collaboration and innovation: that is one area that we need to explore. A place that is high tech where you can sit down and have a conversation, without being too formal and having to reserve a space, is critical.”

“RSO space is very important; for many clubs the union is home.”

The current RSO space is also hard to find.

“In my experience, I had no idea where the RSO office is at, so I spent like 30 minutes finding the RSO office.”

“One of the problems that all of the RSOs have is that nobody knows about them.”

The design direction suggested by study participants in terms of priority and prominence was very clear:

“Student involvement spaces should be facing the Quad…”

Imagining the Future Role of the Illini Union

"We want students to know that this is their union and that when they come here they have areas to go to get more involved if they wanted to."

3. Serve as a point of welcome, central gathering place, and source of campus pride for students, faculty, staff, and alumni.
Already a campus icon, the Illini Union is uniquely situated to build upon its status as the most beloved place at UIUC to become the primary choice for meetings, events, and visits. Findings from the campus capital survey demonstrate what the Illini Union means for the UIUC campus. It is the most significant place on campus, the most social, the third most important place for intellectual activities, and the most restorative building, and, especially for this discussion, the most symbolic building. Survey respondents felt that a primary role for the Ilini Union is that it should be a place to celebrate pride and UIUC traditions; 41% said this was "very important" while 36% said it was "somewhat important."

During the initial phases of the study, there was some question about the Illini Union's potential to be a hub for the whole campus. There were a few suggestions to create a second union that could serve the south end of campus, or that perhaps the existing facility could either become a conference center or a student center, but not both. The Illini Union, however, is recognized by most as the center for campus and deep source of pride that can be leveraged to great advantage.

"The Union is the center of the campus. The central location is great. Coming together here is unifying."

"I love the feeling that great scholars who came to U of I before have studied in the same places, the old, vintage feeling of some of the rooms."

"It is a great place of unity and a fun environment."

"It should be a "must see" building for UIUC."

"As an ACES student who is mostly on the south quad, the Union is more like the symbol of the whole campus."

Comments from workshop participants demonstrate a strong desire for the building to reflect Illini spirit:

"One of our main linking factors is that we are all Illini. I'd like to see more emphasis on our U of I spirit and traditions."

"Illini Spirit should be a common theme throughout the entire building."

"You need to know that you are at the University of Illinois student union.

"I want to know that we are in the Illinois union."

Among the many potential roles for the Illini Union, it is clear that a substantial portion of the campus community looks to the Illini Union to provide high quality event space. When it comes to scheduling conferences, potential sponsors feel torn. While they value the Illini Union as an authentically UIUC campus venue, they are also practical about the advantages offered by competitors, such as parking, space, and cost.

"The ARC has great space. We almost always choose it over the Union. I'm ashamed that I have to say that. They have big multipurpose rooms with great technology. It has great open space."

"We wanted to do a big event next summer. We were already told there was no space. The I-Hotel is nicer, and takes better care of us. The rates are better."

Despite the competition, the Illini Union remains a compelling place for large events.

"We don't want the union to give up. Faculty would rather be here. Improve what it does. We love the union. We don't want to be forced out."

"My conference is attended by external people. They love being on campus. They walk down to Green Street to grab lunch. It's really convenient."

In short, the Illini Union captures such a significant amount of mindshare, and is such an important brand in this respect, that there is no limit to the potential roles it can play on campus.

4. Recreate, relax, and revitalize.
UIUC students want the Illini Union be a place for entertainment and cultural enrichment (especially movies and live music), relaxation (through games and comfortable furnishings), and revitalization (especially through physical activity add access to healthy food. Close to half of survey respondents (47%) said that rest and relaxation should be a high priority, while an additional 32% said it was "somewhat important."

Survey respondents responded to a number of potential activities that related to recreating, relaxing, and revitalizing:

Coffee	68%
Movies/Sports on large screen	65%
Healthy food options	65%
Live music	58%
Bowling, pool, games	58%
Sit by a fireplace	57%

Access to coffee is a must for many students:

“We want people to be able see coffee and say, “There’s the nectar of the gods.”

Watching movies and sports on a large screen was very popular with workshop participants:

“I would love there to be a place to watch sports and have food right nearby.”

“It would be really cool if there were a theater in the Union.”

Live musical entertainment is also highly valued:

“It would be great to be walking on the Quad and hear live music. It would definitely draw us in.“

“It would so great to have a dedicated live music space.”

“I really like the idea of walking in the door and hearing people play.”

Many students are looking for the Illini Union to be a place of refuge from their busy lives:

“A dedicated space to rest or meditate would be helpful since students are under a lot of stress and don’t have anywhere on campus to take a restorative break.”

“It would be great to have the Union focus on growing U of I students as individuals…. that allow us to be more than just “studying machines”. Arts, Meditation, healthy food and are a very important part of life that we often bypass as overly focused students.”

“The Union would be a great please to have a good “study-life balance.” Events like Illinites and the art gallery have greatly helped!”

“The Union should be a place where you can go do almost anything with anyone but still be able to find a quiet spot to relax if you need it.”

“A power nap area would be amazing!”

5. Be a place for students to concentrate and study while maintaining social connections.

Finally, because they are such an academically minded group, UIUC students look to the Union to be a place where they can concentrate, collaborate, and study. “Study and concentration” was rated very important by 42% of survey respondents and “somewhat important” by 29%. A large majority (60%) said that the Illini Union should support “quiet study.”

“I think putting smaller nooks is very important where you can charge your electronics as well. Being able to separate yourself slightly to study is very important to me.”

“If there was a section made for quiet space; I’m sure a lot of students would love that.”

In design workshops, students articulated the need for more spaces to study:

“Add more study space. Right now it is hard to find study space in this area of campus. “

“I feel like I’m limited to the first floor. I don’t know that there are study spaces on the upper floors.”

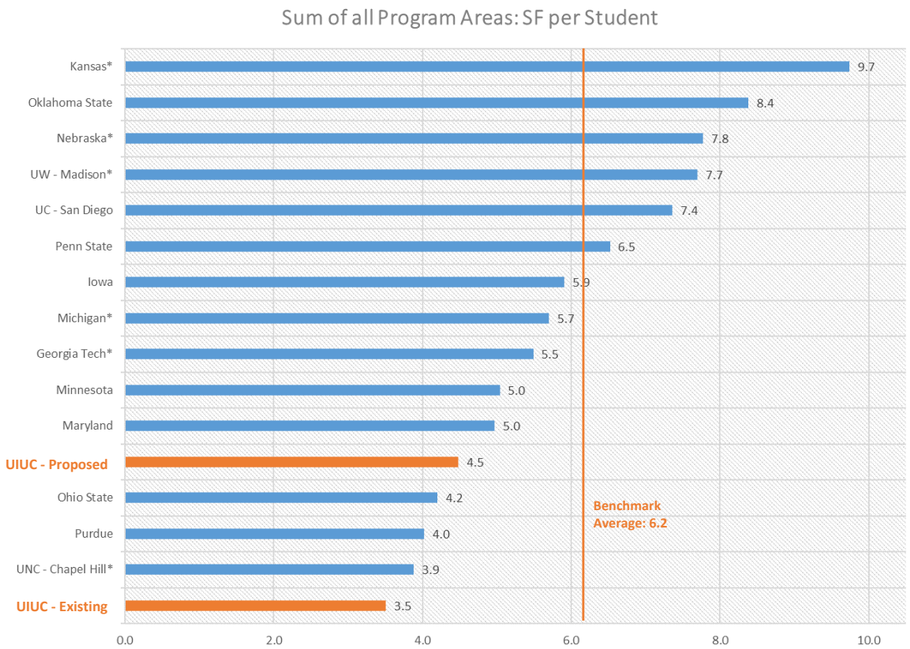
Program Benchmarking

Program Benchmarking

The study team undertook a benchmarking analysis to compare the Illini Union to student unions at UIUC's peer institutions and other selected universities. The comparison was made on the basis of usable square feet of program spaces divided by the total number of students. Where possible, exact net square feet figures were utilized. Otherwise, these figures were calculated through scaled building floor plans. Student population numbers were obtained from the most recently available campus enrollment figures. While exact data is not possible, this analysis provides a reasonable basis of comparison for master planning.

Sum of All Program Areas

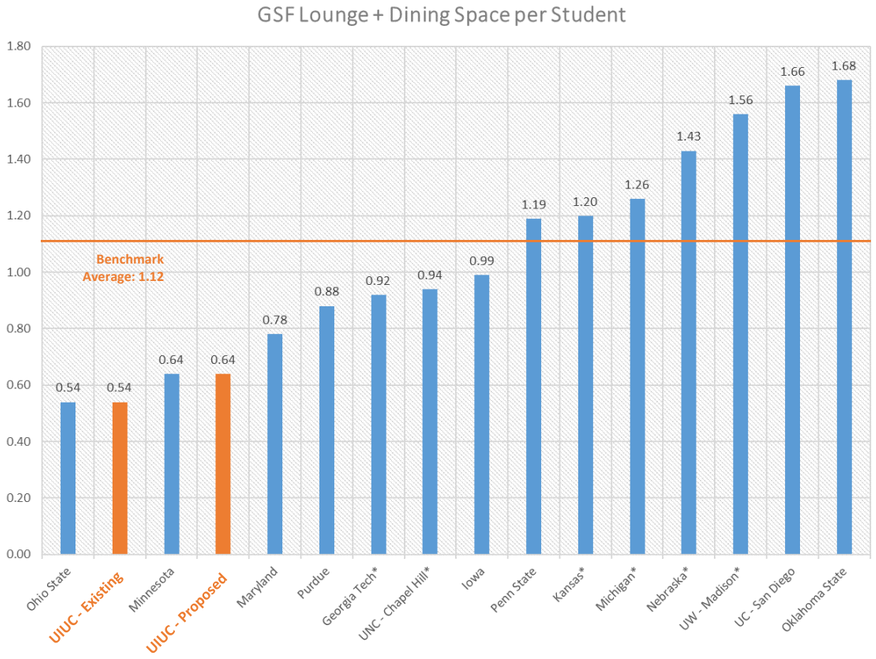
The Illini Union is relatively small in comparison to peer institutions in terms of square feet of all program areas per student, ranking 16th out of 16 selected universities. The benchmark average is 6.2 square feet per student. The Illini Union currently has 3.5 square feet per student; the proposed renovation would bring this number to 4.5 square feet. While still short of the average, this proposal brings the Illini Union close to parity in a number of key functions.



*Expansion planned or in progress, or need identified

Lounge and Dining

In this proposed program, lounge space and dining are combined because all seating has the potential to serve as lounge space. The benchmark average for UIUC peers is 1.12 square feet per student. The current Illini Union contains just under half of that amount (0.54 square feet per student). The proposed design increases this amount to 0.64 square feet per student.



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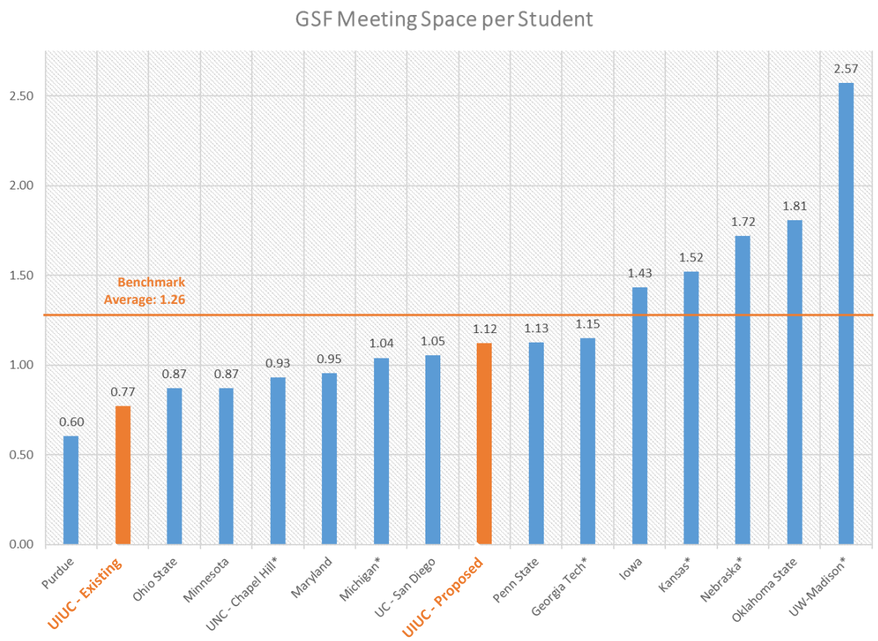
Meeting and Events

The peer benchmark average is 1.26 square feet per student. The current facility provides only 0.77 square feet, while the proposed design includes 1.12 square feet per student, which brings the Illini Union into closer alignment with the benchmark average.



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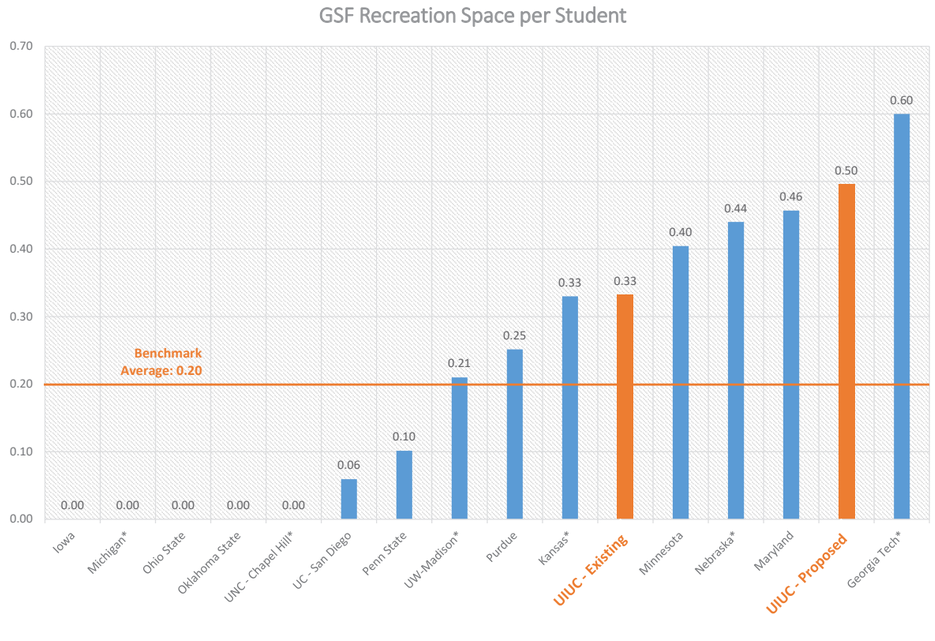
Recreation

There is currently 0.33 square feet per student of recreation space. The addition of a fitness / wellness zone brings it to .5 square feet per student. Note that the peer average of 0.2 square feet per student skews lower because five of the institutions have no recreation space within their facilities. The existing bowling and billiards space is included in the recreation category.



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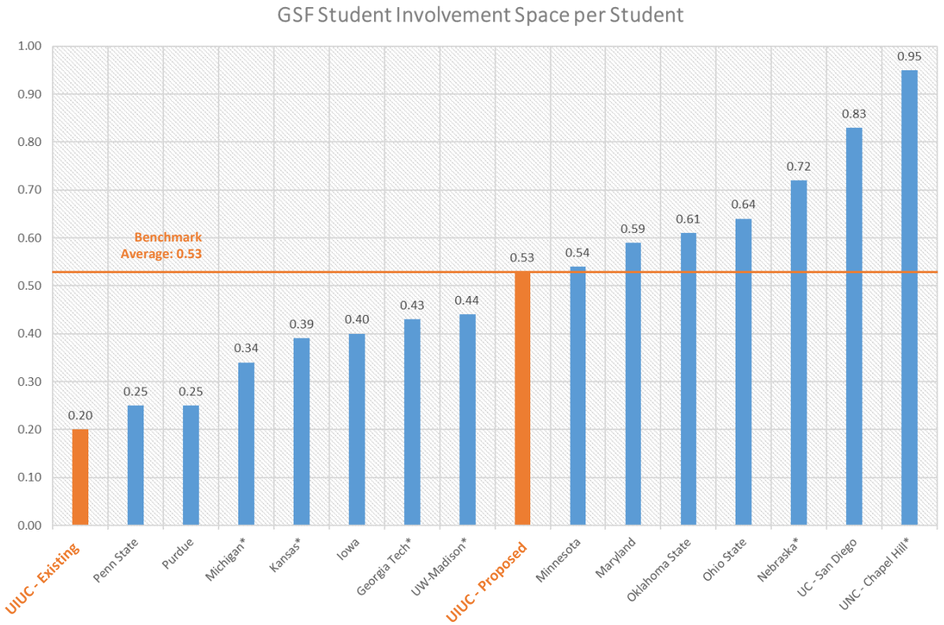
Student Involvement

Currently, the Illini Union includes 0.2 square feet per student. This proposal more than doubles this amount to 0.53 square feet per student, which equals the peer institution average.



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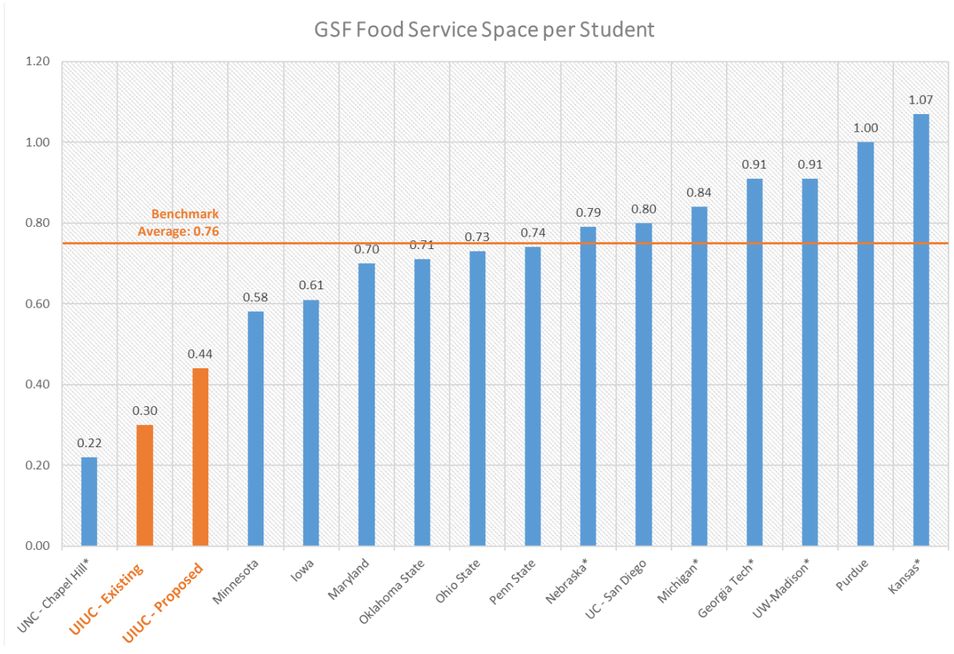
Food Service

The proposed design provides for 0.44 square feet per student, an increase from 0.3 square per student in the current facility. The peer benchmark is 0.76 square feet per student.



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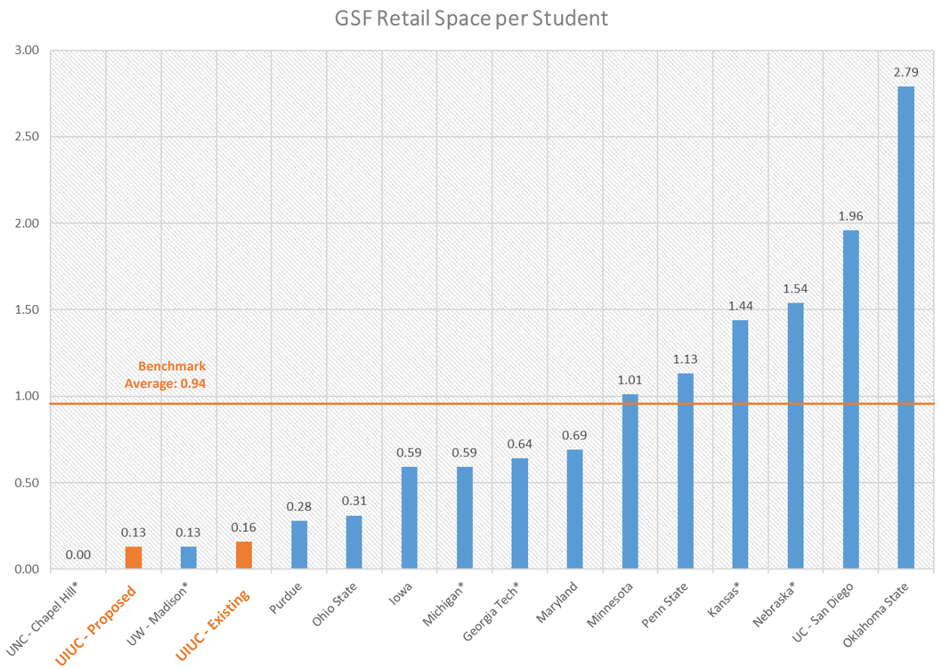
Retail

There is a small reduction of retail space, from 0.16 square feet to 0.13 square feet per student. Note that the discrepancy from the national benchmark (0.94) is due to the fact that many student union peers, unlike the Illini Union, include a bookstore within the union. The 18,250 square foot Illini Union Bookstore is part of the Illini Union, but it is housed in a separate building.



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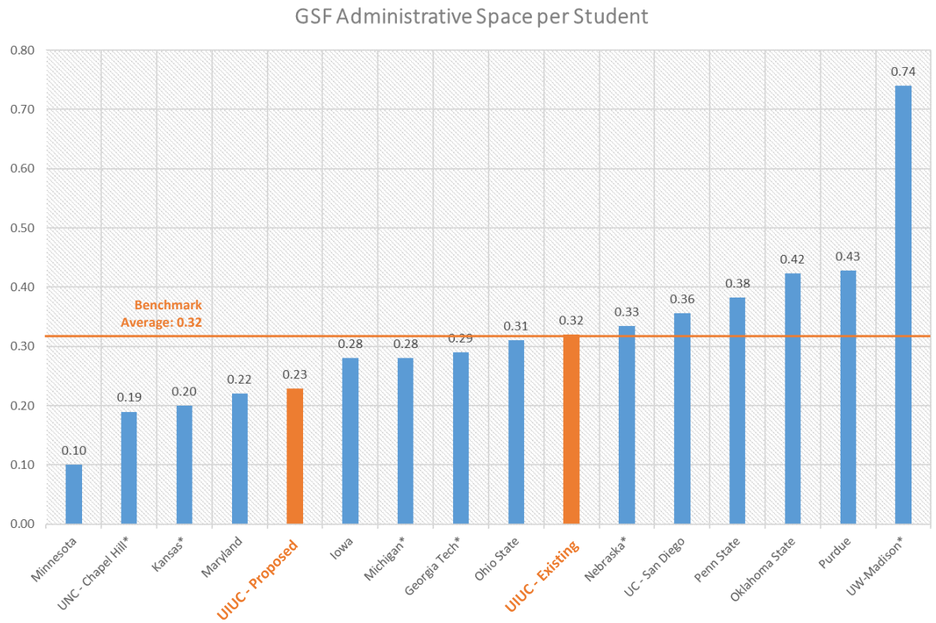
Administration

There is a small reduction in the amount of administration space, from 0.32 to 0.23 square feet per student. The benchmark average is 0.32 square feet per student.



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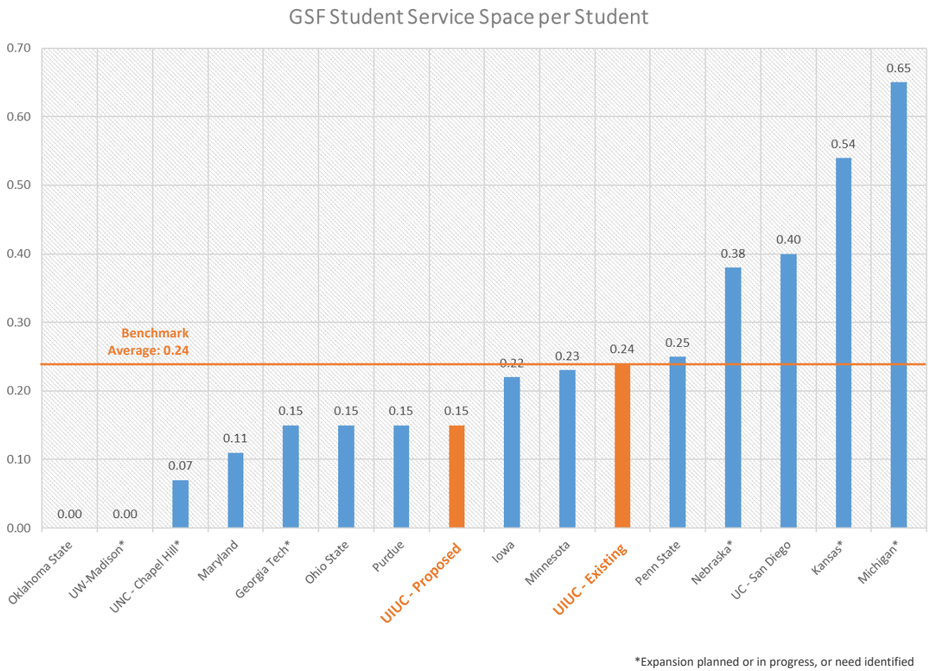
Student Services

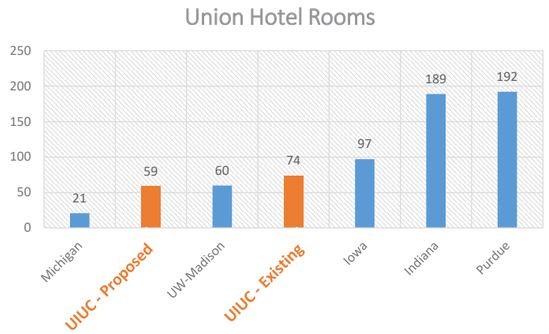
Student services space is reduced from 0.24 square feet per student to 0.15 square feet per student. The change is due to the integration of the CLASS computer/study space functions into lounge space.



*Expansion planned or in progress, or need identified

Hotel

The number of hotel rooms is reduced in this proposal, from 74 to 59. The rooms to be removed are located on the third floor. They are replaced by additional meeting space adjacent to the new Illini Rooms.



Broad Scope Program

Broad Scope Program Summary

February 2017

Space Type	Notes	Existing ASF total	Proposed ASF total	Increase/ Decrease
1. Lounge & Dining Seating		24,198	28,707	19%
2. Meeting & Event Spaces		34,543	50,753	47%
3. Recreation		14,994	22,391	49%
4. Student Involvement		9,250	23,766	157%
5. Food Service		13,356	20,000	50%
6. Retail Spaces		7,199	5,720	-21%
7. Administration		14,427	10,348	-28%
8. Hotel		22,766	17,990	-21%
9. Student Services		10,829	6,950	-36%
10. Operations & Maintenance		7,305	15,686	115%
	Assignable Area (ASF)	158,868	202,311	
	Gross Area (GSF)	327,877	416,630	
	Efficiency Factor	48%	49%	

Broad Scope Program

The current facility contains 327,777 gross square feet (GSF). This proposal adds 88,853 GSF, which brings the total to 416,630 GSF.

The broad scope program summary is provided in the table below. Some of the key program highlights include:

1. Lounge and Dining Seating
Lounge and dining seating are combined in this analysis because they are used interchangeably by students. Lounge space, which can be used for relaxation, socializing, and study, is a priority for students, as are better dining environments. In this proposal the gallery and the Colonial Room are converted to quiet study lounges, and the remote dining seating on the lower level moves to a more central location on the first floor. Pre-function space associated with the Illini Rooms (see below) is also included in this category. The proposal increases the amount of lounge and dining space by nearly 20%.

2. Meeting and Event Space:
The study identified enhanced and expanded meeting and event space as a high priority. This proposal expands the Illini Union's overall meeting capacity by nearly 30% and enhances its versatility through the addition of highly sought after room sizes and the use of movable partitions.

Large event capacity in the Illini Rooms will be increased by approximately 60% to 13,980 net square feet (NSF). The implications in terms of number of people accommodated for large events are as follows:

	Current	Proposed
Banquet seating (18 SF/Person)	513	777
Theater/Lecture (10 SF/Person)	924	1,398

Note that pre-function spaces associated with the Illini Rooms (west pre-function and south pre-function) total 4,100 NSF, and can be used to accommodate even larger events.

The existing courtyard is replaced with two new entertainment venues: a student programming performance venue and a theater with capacity for approximately 350 people.

3. Recreation
Recreation space is more than doubled to 32,637 NSF. This proposal adds on to existing bowling and billiards spaces with 17,746 NSF added for a new fitness center.

4. Student Involvement
Enhanced and improved student involvement space is a high priority for students and faculty/staff. The proposal more than doubles the amount of involvement space.

5. Food Service
The proposed food service program provides a number of dining options, which is important to students. The dining program will provide more efficiency and the flexibility to continue to use outside caterers or switch to self-operated catering. The Colonial Room is repurposed for quiet study, and a destination restaurant adjacent to the Quad is added to appeal to a broader array of customers. The total amount of food service space increases from 13,356 NSF to 20,000 NSF.

6. Retail Spaces
This proposal calls for 5,720 NSF of retail, which is a decrease from the existing 7,199 NSF. Several office support and storage spaces have been consolidated, and the relocated Quad Shop is reduced from 2,126 NSF to 1,950 NSF. It should noted that the Illini Union Bookstore, located in a separate building, will still maintain 18,250 SF of retail space.

7. Administration
The program includes 10,348 NSF for administration, which is a decrease from the existing 14,427 NSF. The bulk of this reduction results from the elimination of 4,146 NSF of underutilized storage, support, and office space at the mezzanine level. In the redesigned Illini Union, most efficient use of space would balance the loss of actual square footage.

8. Hotel
Hotel space is reduced to 17,986 NSF from 22,914 NSF, and the total number of hotel rooms is reduced from 74 to 59. The eliminated third floor hotel rooms are converted to flexible meeting space to support events held in the Illini Rooms. Some of the rooms are converted to be ADA accessible.

9. Student Services
Student Services spaces are reduced from 10,829 to 6,950. The reduction is mostly due to the elimination of the CLASS computer lab on the lower level. As a trend, personal computers are replacing computer labs.

10. Operations and Maintenance
Operations and Maintenance is more than doubled, from 7,305 to 15,686 NSF. This includes a net increase of 5,706 NSF for storage and 2,000 for the loading dock. Maintenance office spaces on the third floor are relocated to the lower level.

Design Concepts & Strategies

Design Concepts and Strategies

The top design priorities are to create:

- Better accessibility into and throughout the facility
- A welcoming first floor experience
- Clear wayfinding, including floor-to-floor connections between the north, center, and south buildings
- Strong connections to the Quad and to other outdoor spaces
- Internal vistas that foster energizing encounters and create awareness of what the Union has to offer
- More daylight

Architectural changes must also complement the historic character of the existing building.

Virtually all of the original 143,000 gross square feet (GSF) in the north building and the 133,000 GSF in the south buiding is retained. The entire first floor and the basement between the north and south structures is replaced with a newly constructed 131,000 GSF center infill that consists of a basement and three new floors. In addition, a 9,000 GSF penthouse services the new center infill.

Floor-by-floor, key functions include:

- Lower Level—Entertainment Hub: Theater for movies, lectures, and live performance; club space and restaurant space for live music, dancing and watching sports on a large screen; fitness center; retained bowling lanes and game space, and an optional two levels of underground parking.
- Main Level—Dining and Lounge: Two-story cafe space; lounges with fireplaces and outdoor connections, micro-restaurants and retail spaces; quiet study spaces; destination dining venue; preserved North and Quad Lounges; enhanced outdoor lounge space.
    - With the Illini Rooms moving up in the building, the main level becomes open and connected with clear views in the north-south and east-west direction.
- Second Level—Student Involvement and Support: Cafe space (connected to first floor); state-of-the-art student involvement hub with space for student organizations and collaboration; study space; flexible meeting space for Student Senate and other groups; marketing and administration space; and space for student support functions.
- Third Level—Premier Meeting and Event Space: Greatly enlarged Illini Rooms and pre-function space; variety of additional meetings spaces; catering; retained hotel rooms facing the Quad.
- Fourth Level—Hotel and Meetings: Retained hotels and meeting space; administration space.

A combination of skylights, transparent walls, elevators, and connecting stairs and walkways fulfill the programmatic and design priorities described above. The resulting facility is boldly contemporary, yet honors and complements the existing historic structure.

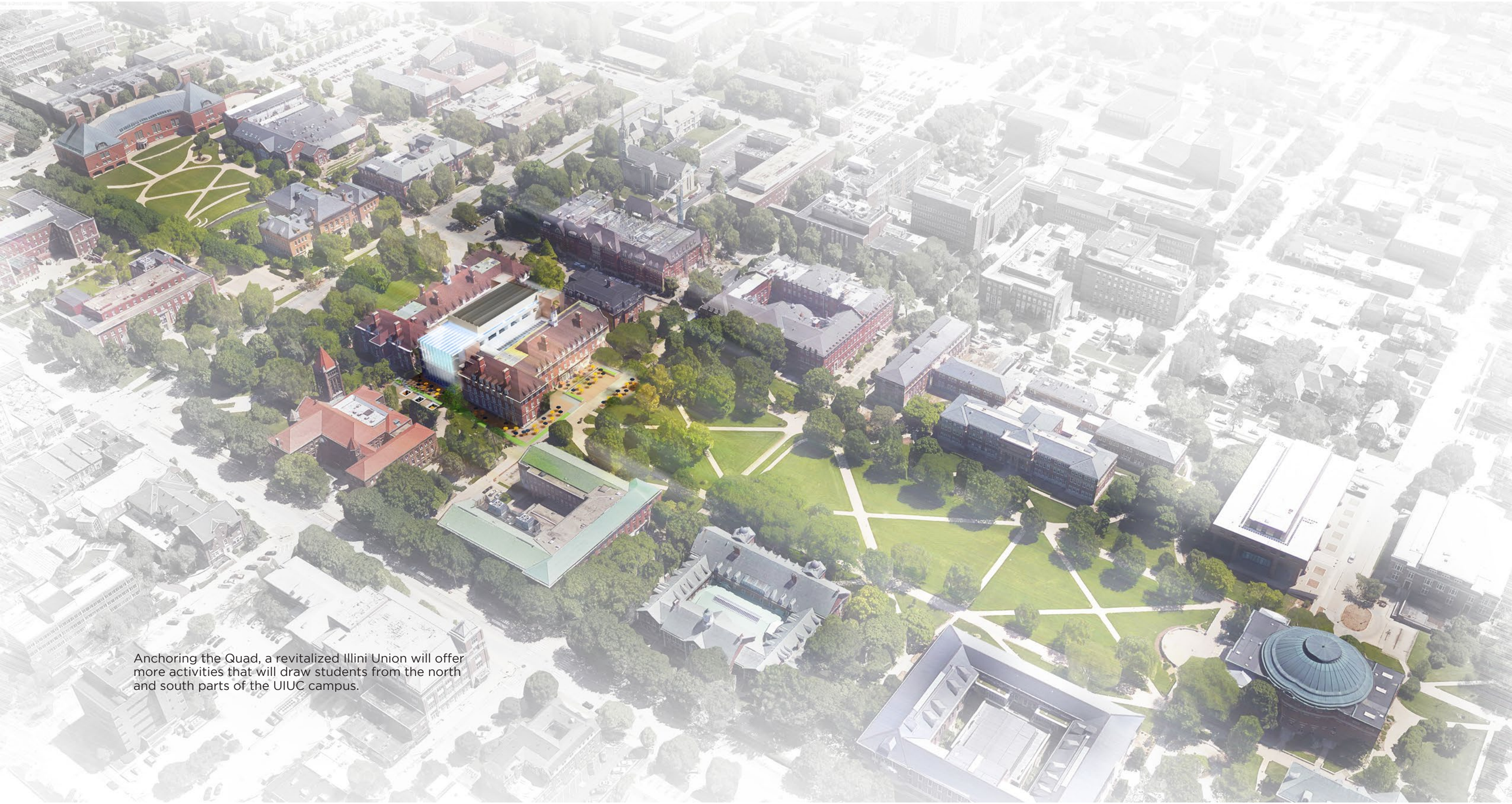
From the exterior on the west side, the new center infill has a simple transparent facade to showcase the activity inside and complement the two historic pavilions on each side. The glass wall steps down in height to relate to the existing cornice and steps back in plan adjacent to each pavilion to mark the entry points.

In addition to the interior and exterior design concepts, sustainability will be an integral part of the design strategy. The following are considerations for credits to achieve Leadership in Energy and Environmental Design (LEED) goals for the project:

- Project site is located on a previously developed site
- Close walking distance to bus routes
- Bicycle facilities and supporting shower facilities within fitness area
- Minimize surface parking
- Provide electrical vehicle charging and preferred parking for green vehicles.
- Rainwater management and natural vegetation
- Vegetated roofs
- Photovoltaic panels
- Provide pedestrian-oriented outdoor space
- Salvage / reuse of any of the existing materials demolished, for example, old brick from south building
- Interior finish selections with low VOC and recycled content
- Increase of daylight
    - Glazing on east west reducing dependence on electrical lighting
    - Skylights bring light into the center of the building
- Innovation credits:
    - Green cleaning program
    - Building education throughout the facility with green features

Additional sustainability features will be achieved through the mechanical and electrical system designs. Refer to the MEP Systems Narrative for additional, potential LEED credits.

Aerial View of the Illini Union and Quad



Anchoring the Quad, a revitalized Illini Union will offer more activities that will draw students from the north and south parts of the UIUC campus.

Southwest Aerial View of the Illini Union

A revitalized Illini Union becomes a beacon on campus, with a major new entry to the west and activated outdoor spaces.

Exterior Rendering

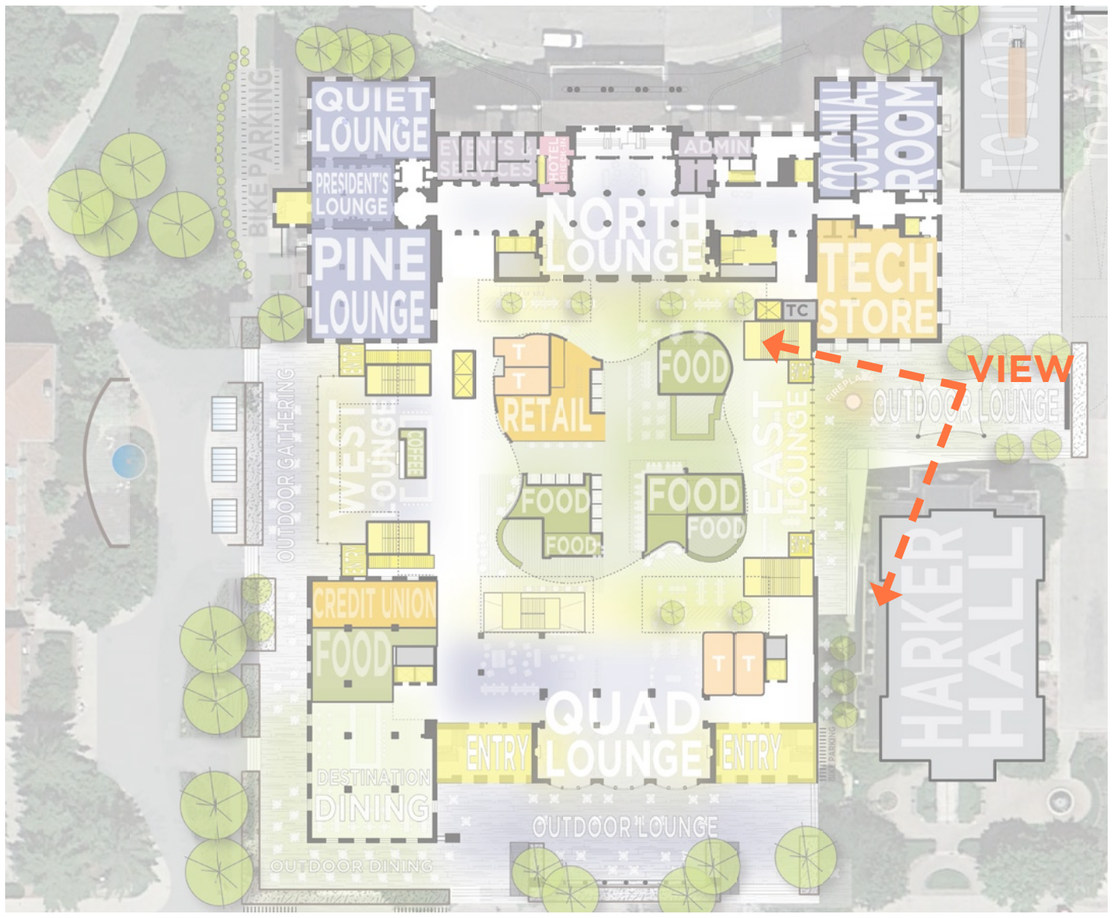
Key Plan - Main Level

West Facade

A transparent entry to the west complements the proportions of the north and south brick pavilions. Expanded outdoor lounge space activates the important pathway between Altgeld Hall and the Illini Union.

Exterior Rendering

Key Plan - Main Level

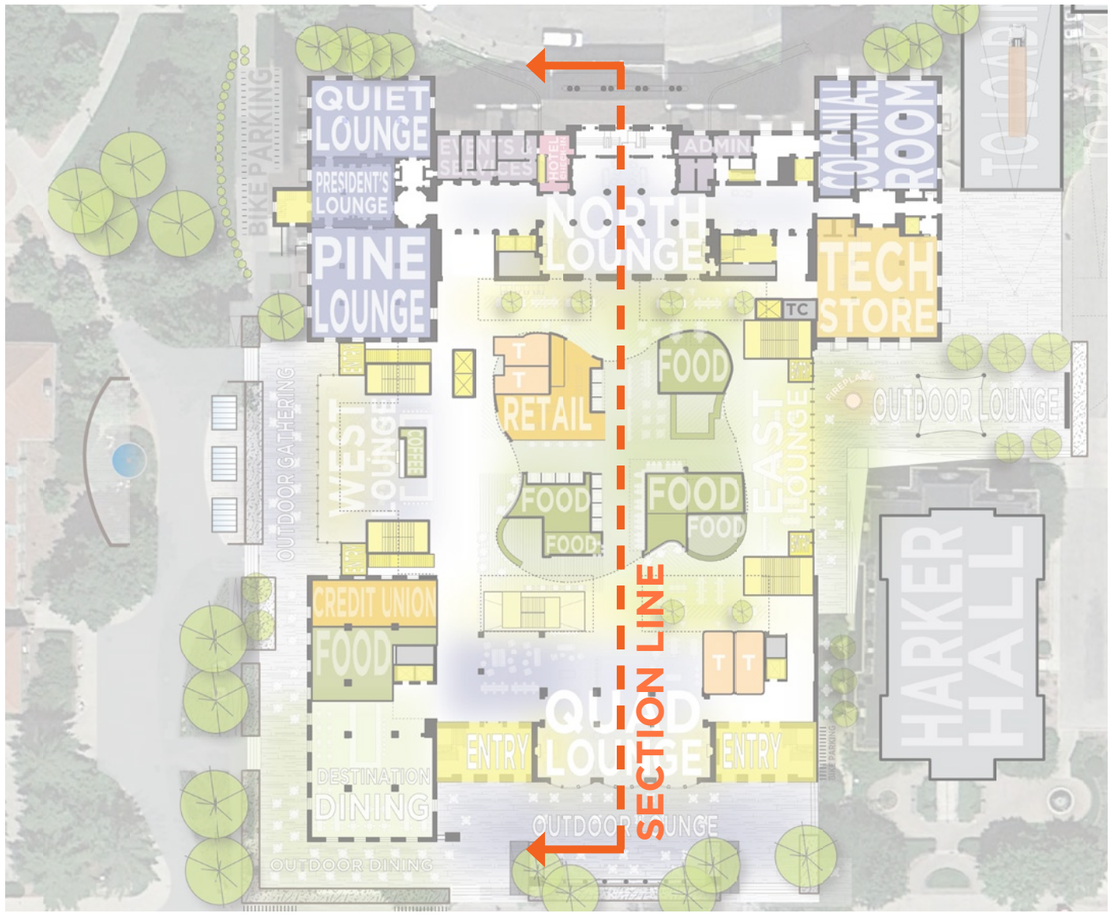


East Facade

A quiet plaza located to the east of the new addition provides respite, shade, and a strong indoor/outdoor connection.

Section Diagram

Key Plan - Main Level



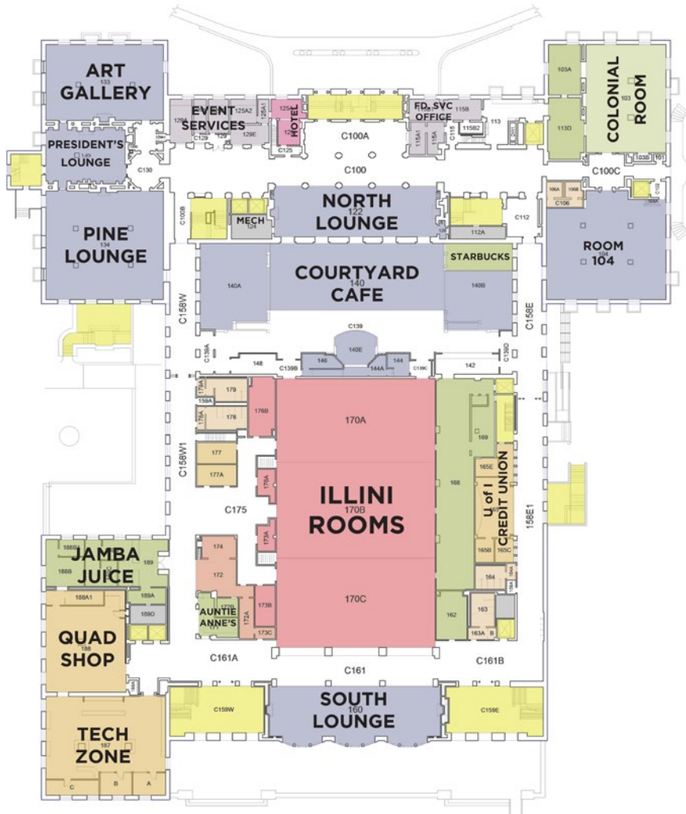
North-South Section Diagram
Looking West Through The Illini Union

The new design creates a stronger north-south connection between Green Street and the Quad. A new dining experience on the main level is flanked by the existing historic lounge spaces. New student programming spaces on the lower level provide opportunities to show movies and hear live music. Expanded student involvement space is located on the second floor. Expanded and relocated Illini Rooms, along with other meeting spaces and refurbished hotel rooms will position the Illini Union as an attractive conference venue. Optional underground parking could be located below the building.

Floor Plans

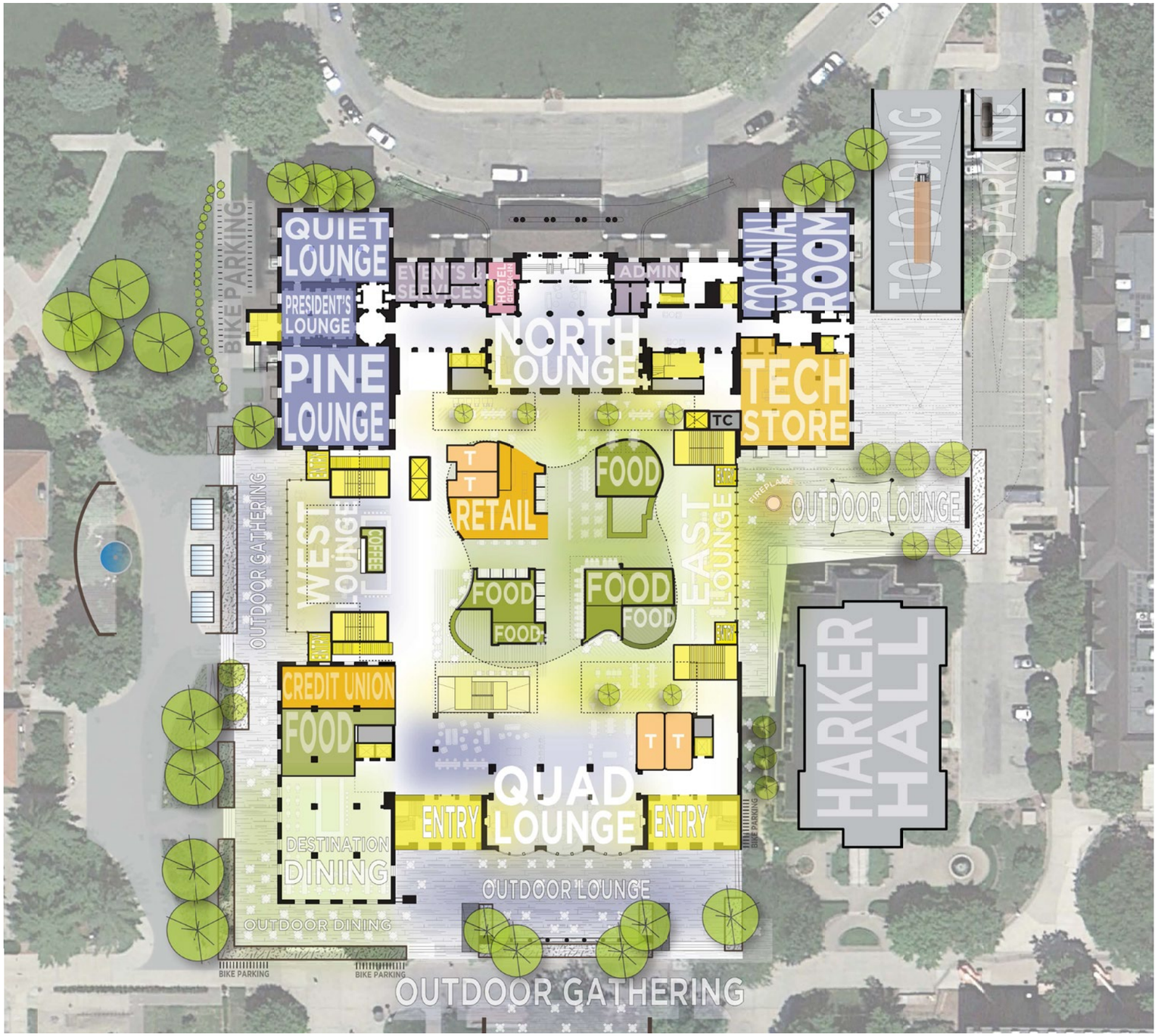
Existing Building Plans for Reference

Main Level



Floor Plans
Proposed Concept

Main Level



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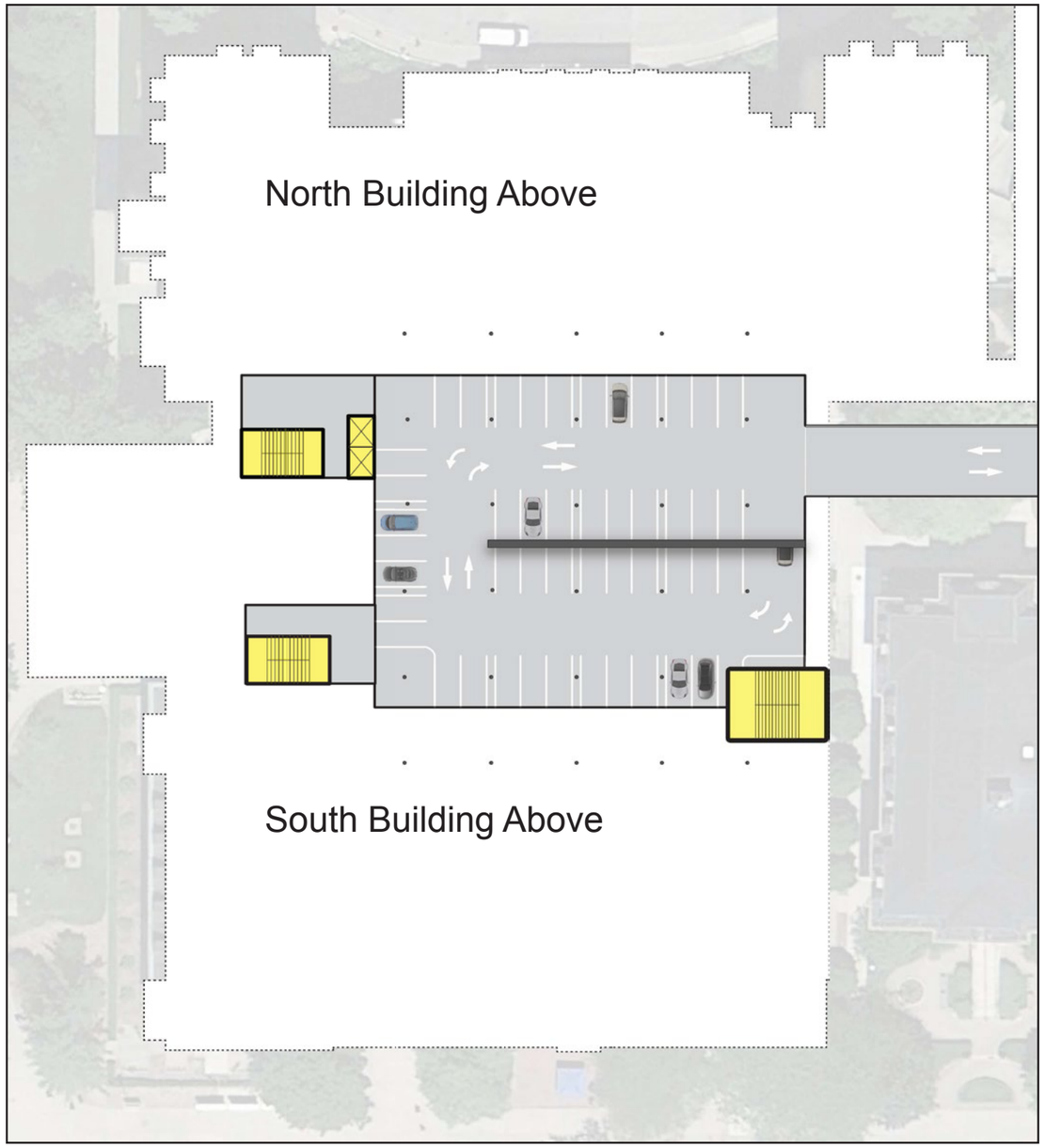
NORTH

Floor Plans

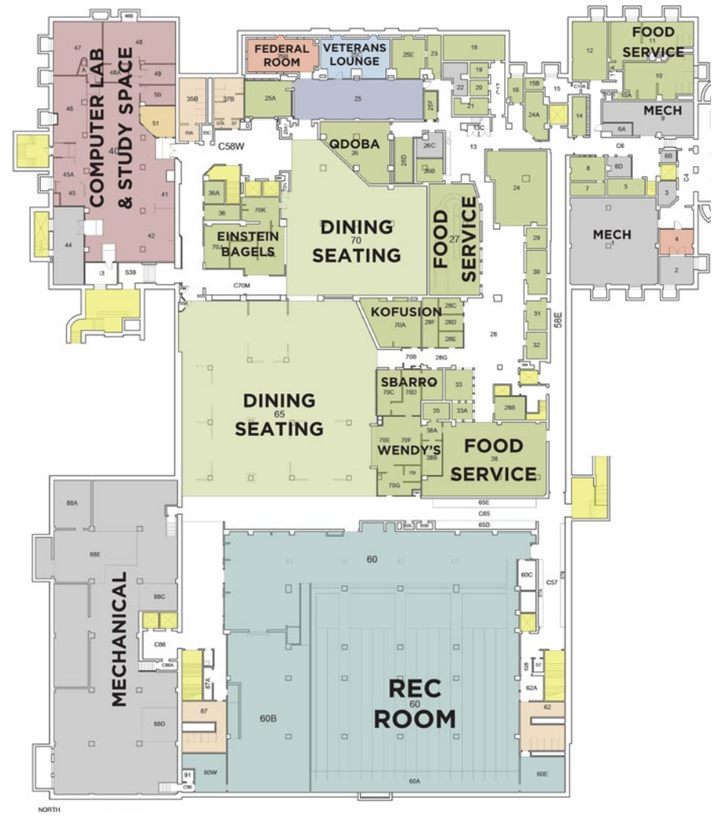
Proposed Concept

Underground Parking Level For Reference



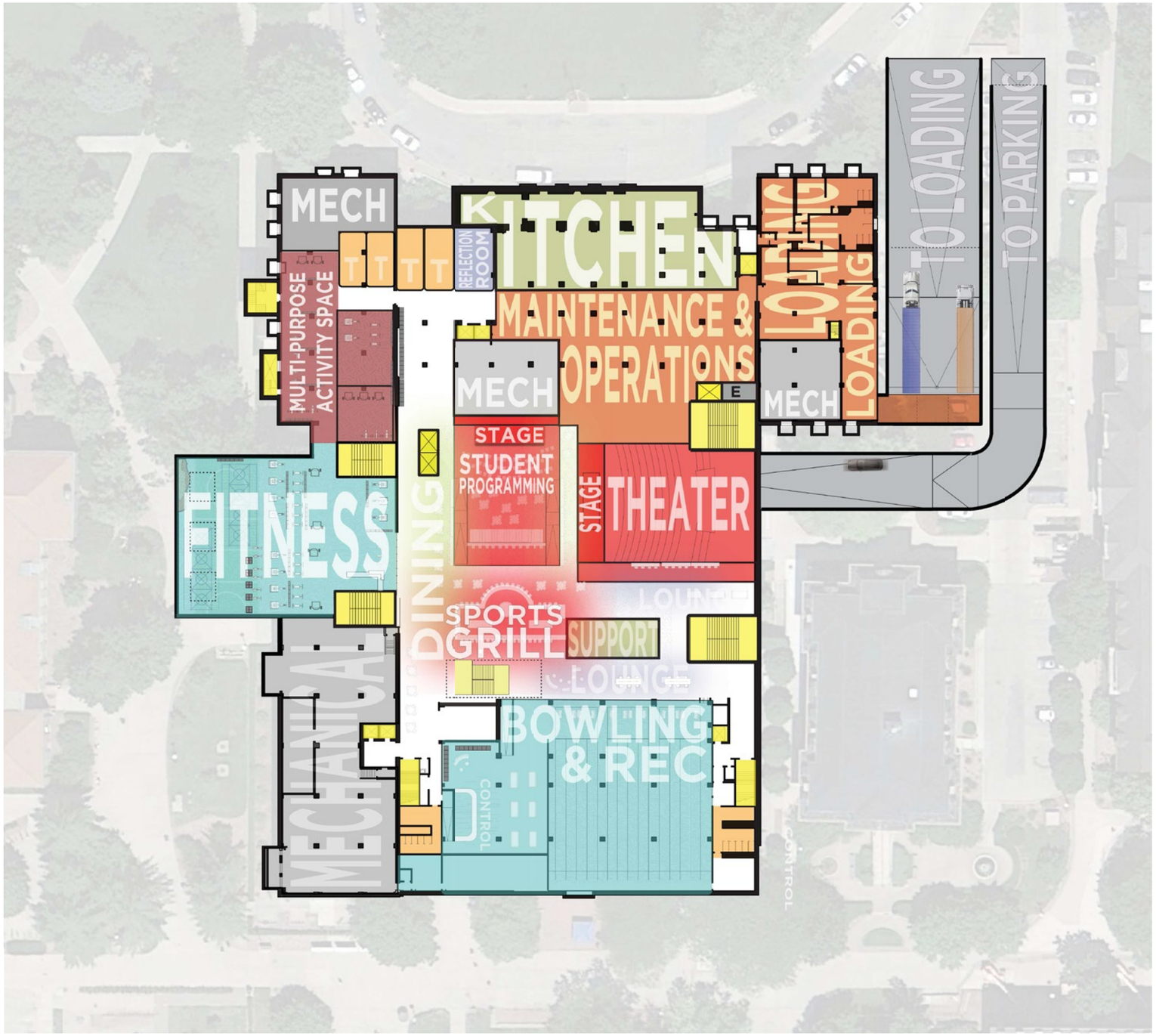
Existing Building Plans for Reference

Lower Level



Floor Plans
Proposed Concept

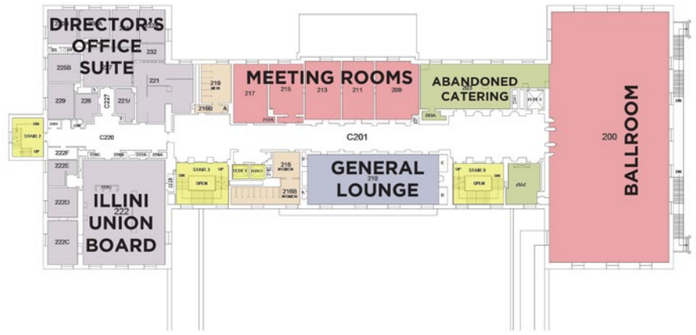
Lower Level

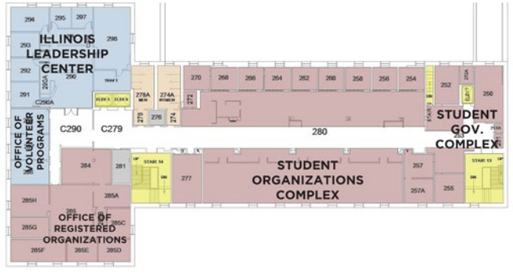


Floor Plans

Existing Building Plans for Reference

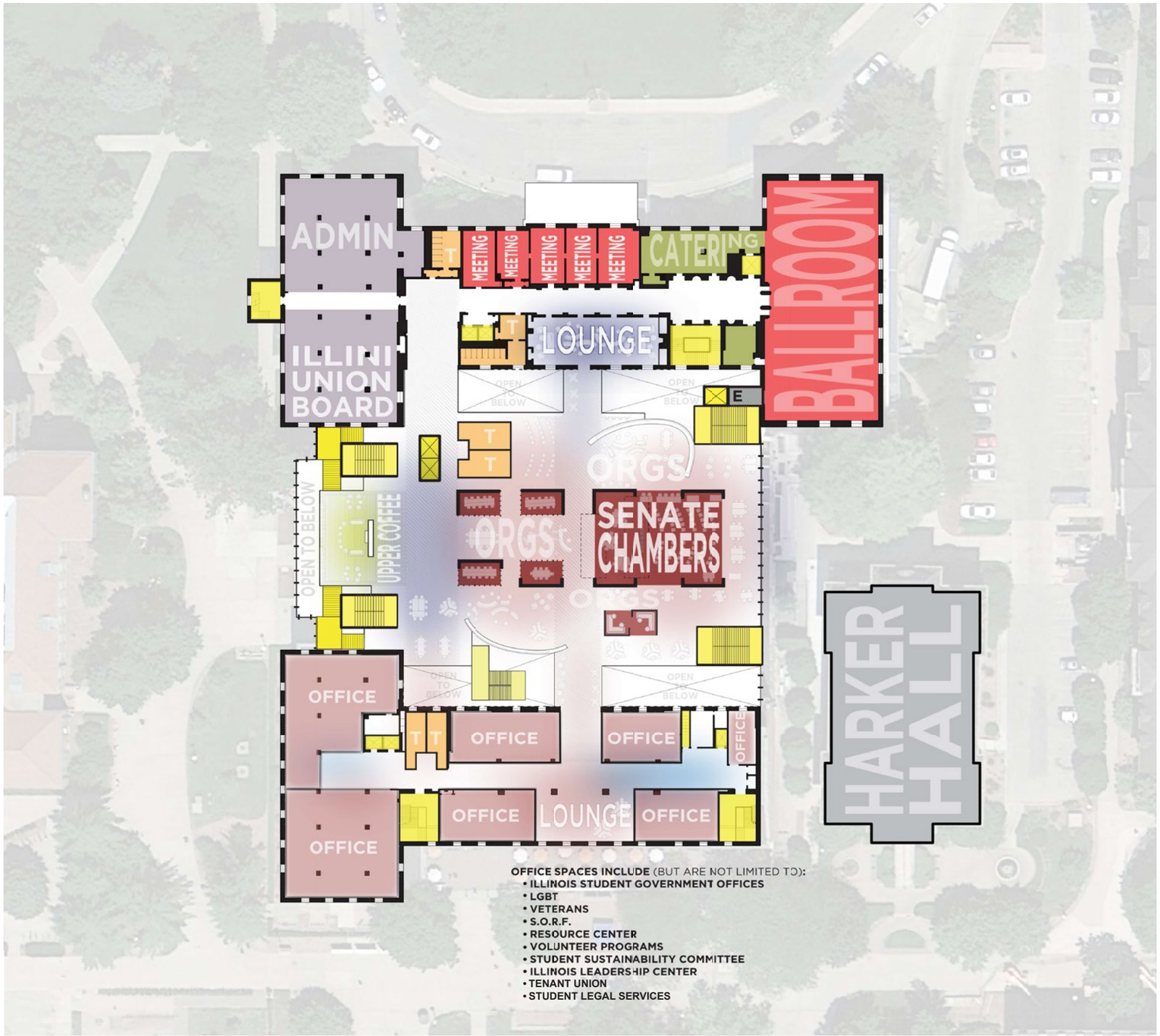
Level 2





Floor Plans
Proposed Concept

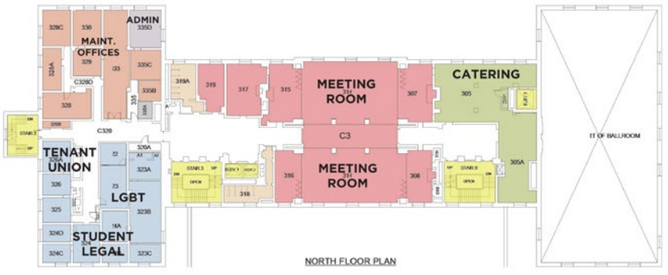
Level 2



Floor Plans

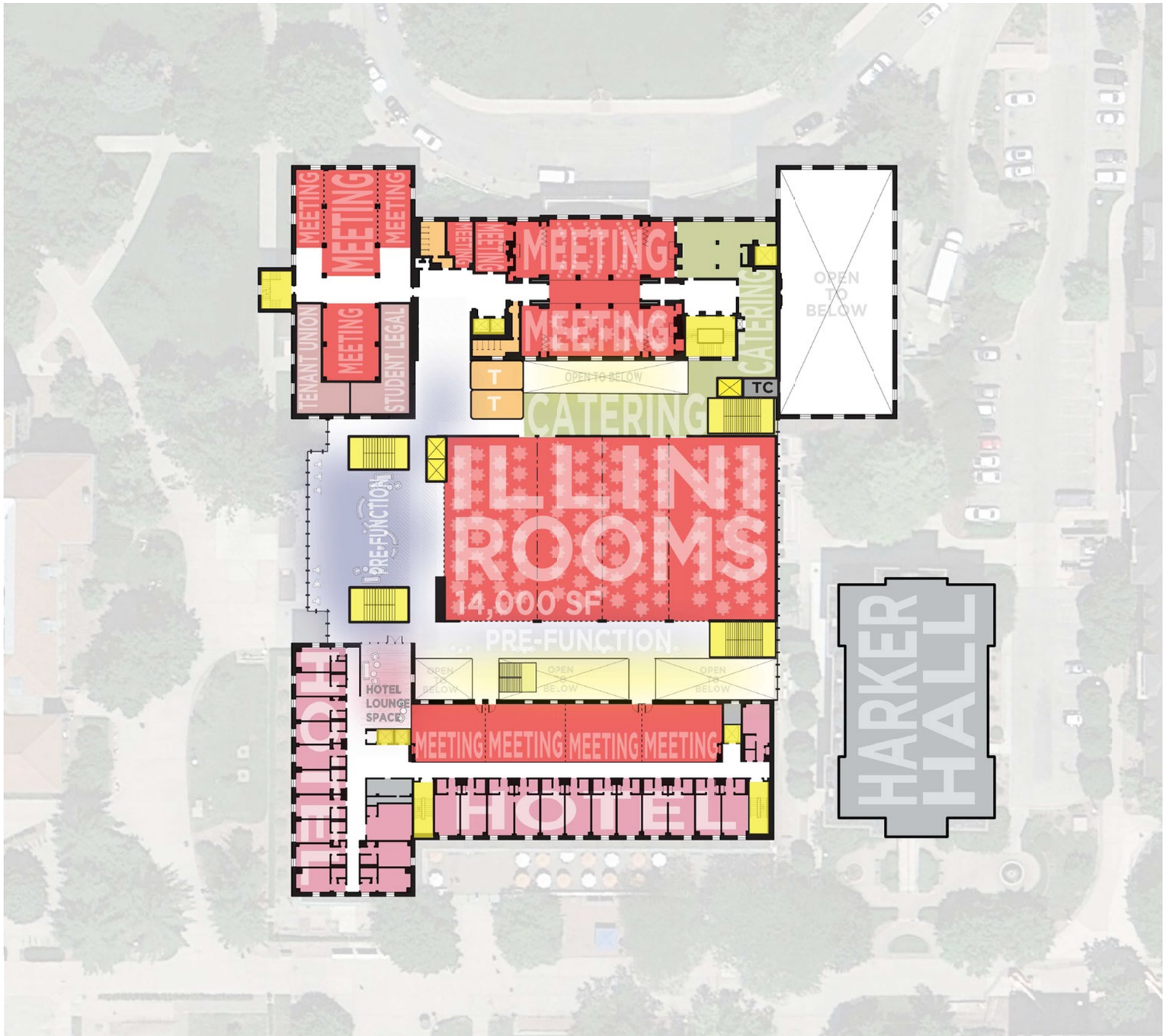
Existing Building Plans for Reference

Level 3



Floor Plans
Proposed Concept

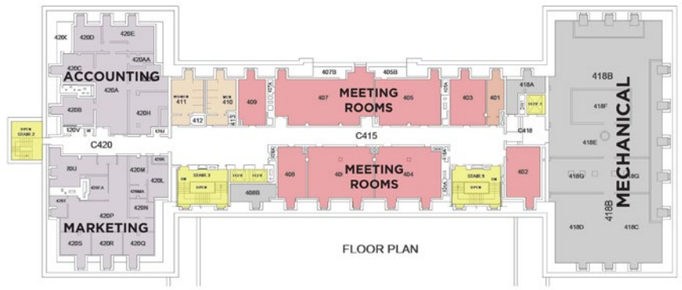
Level 3



Floor Plans

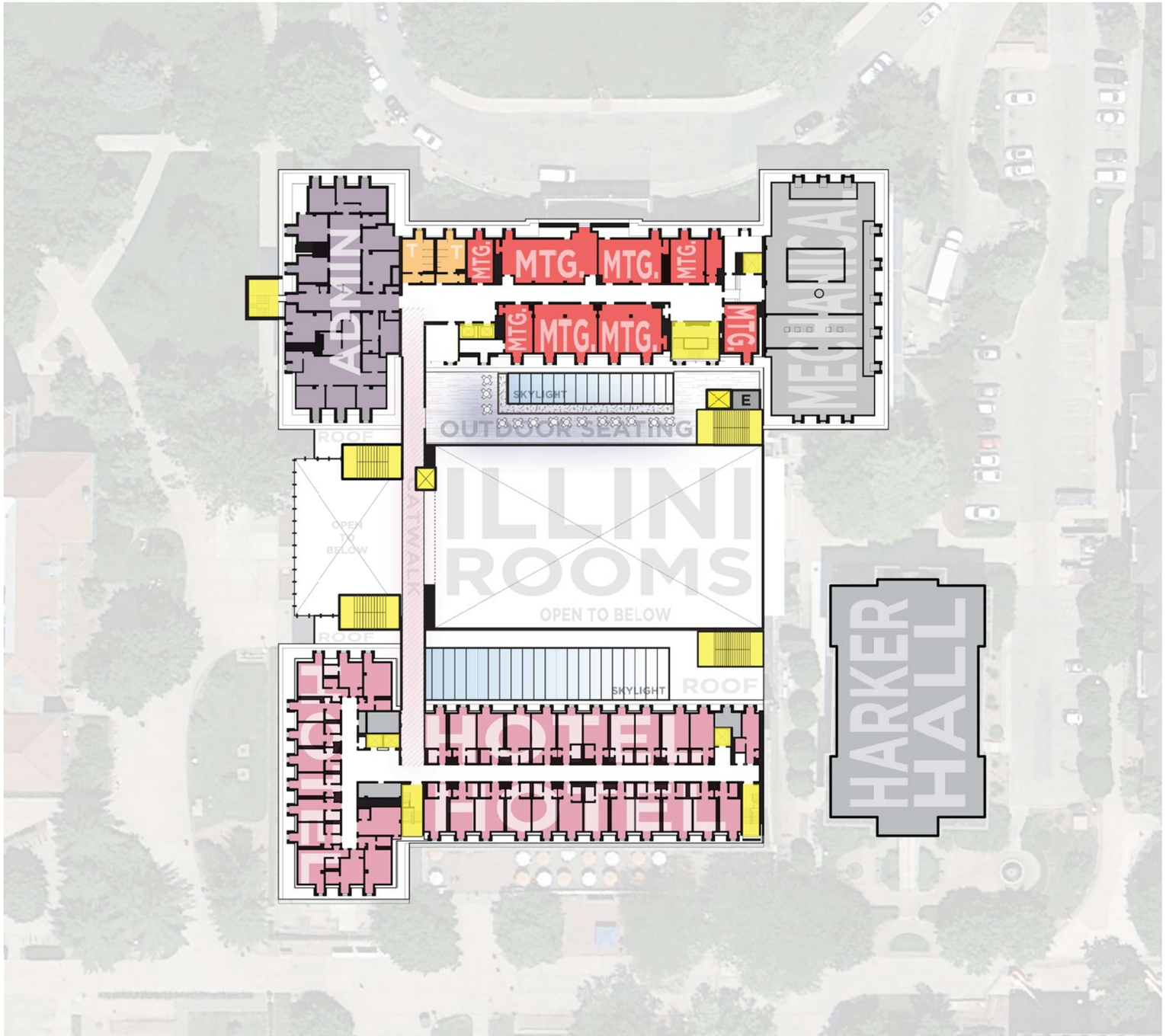
Existing Building Plans for Reference

Level 4



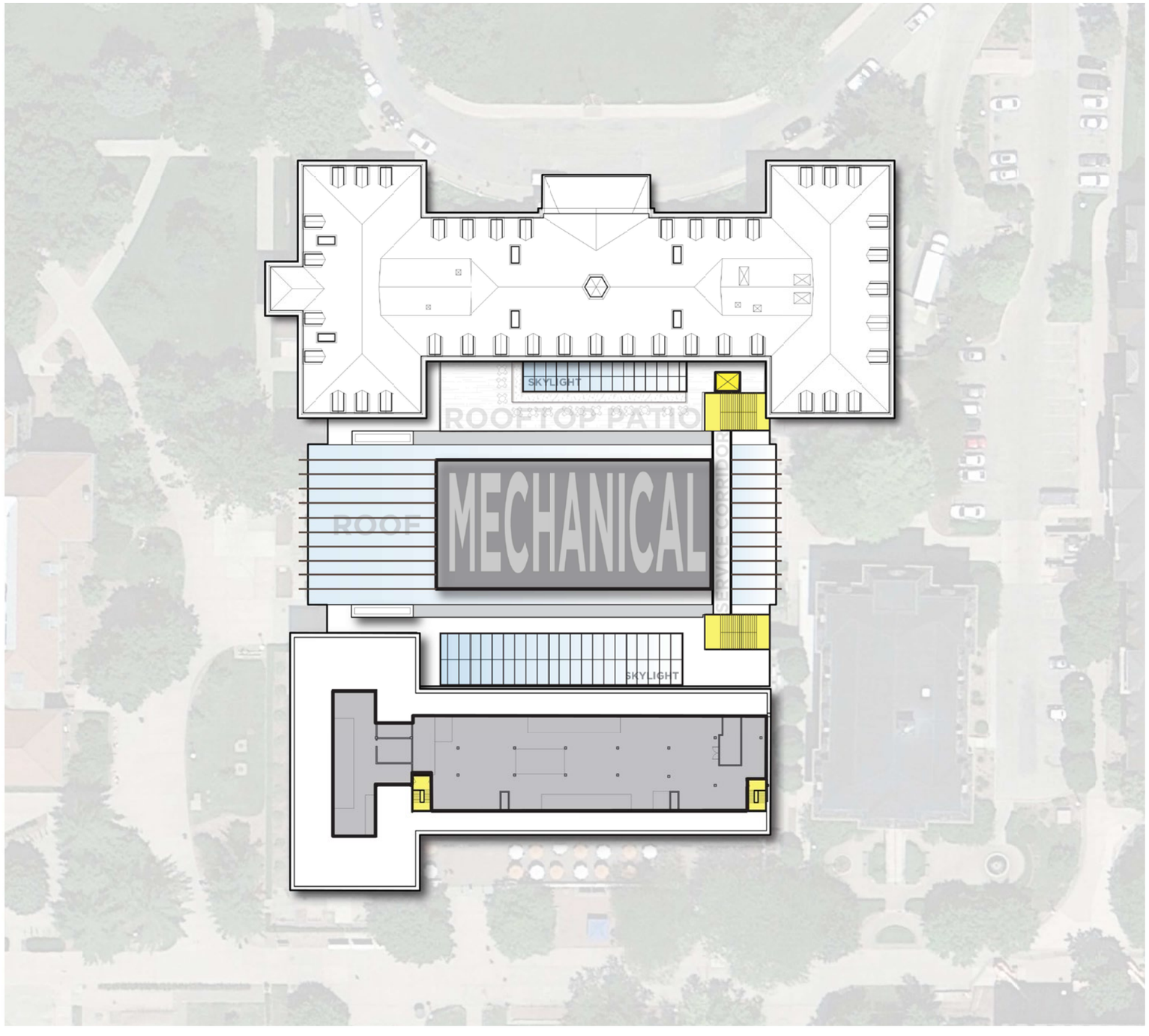
Floor Plans
Proposed Concept

Level 4



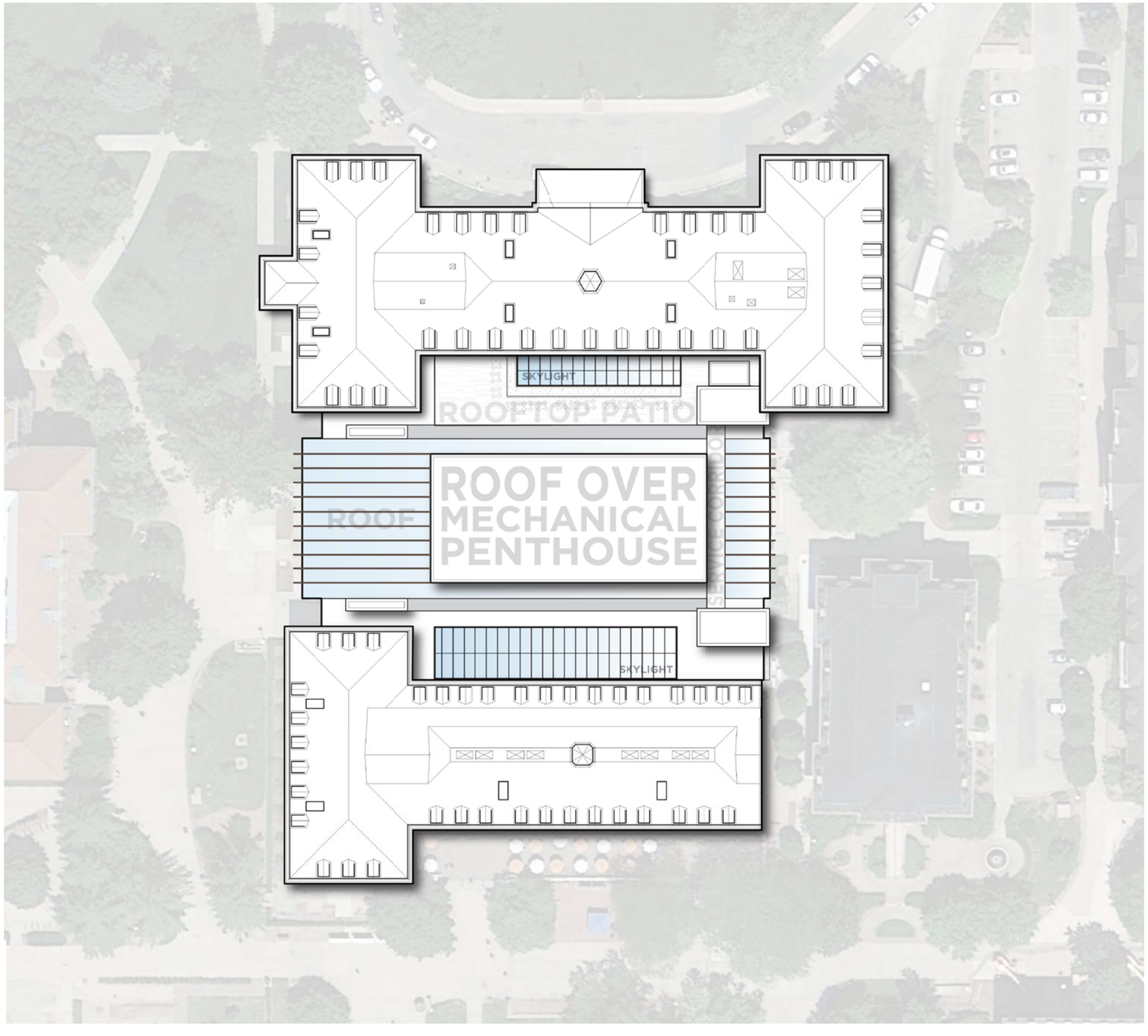
Floor Plans
Proposed Concept

Penthouse Level



Floor Plans
Proposed Concept

Roof Level



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NORTH

Interior Renderings

Key Plan - Main Level

Coffee House

The two-story coffee house lounge draws visitors into the Illini Union and brings students into close proximity with the student involvement hub. Expanded outdoor lounge space is located adjacent to the west entrance.

Interior Renderings

Key Plan - Main Level

Dining

A skylit atrium, long vistas, and overhead walkways animate the dining venues adjacent to the south building.

Interior Renderings

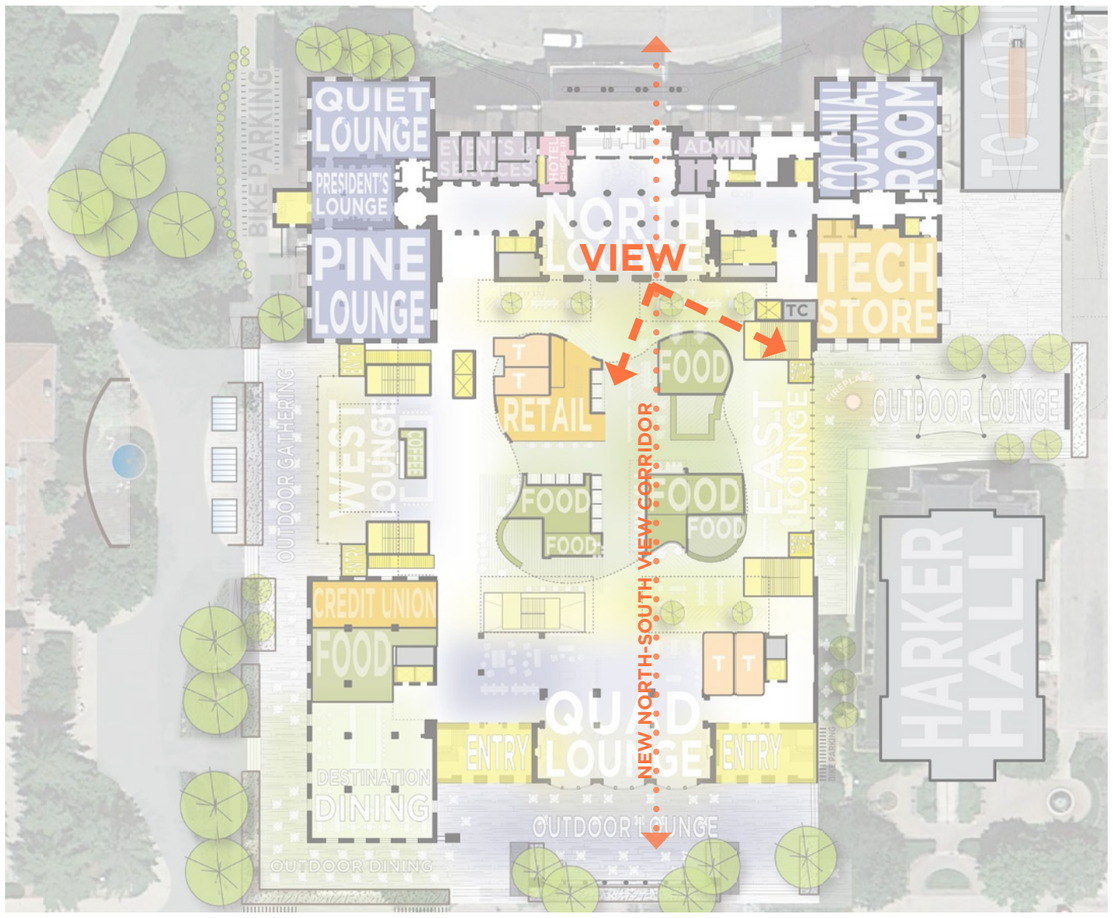
Key Plan - Main Level

Dining

A skylit atrium, long vistas, balcony, and overhead walkways animate the dining venues and façade of the north building.

Interior Renderings

Key Plan - Main Level

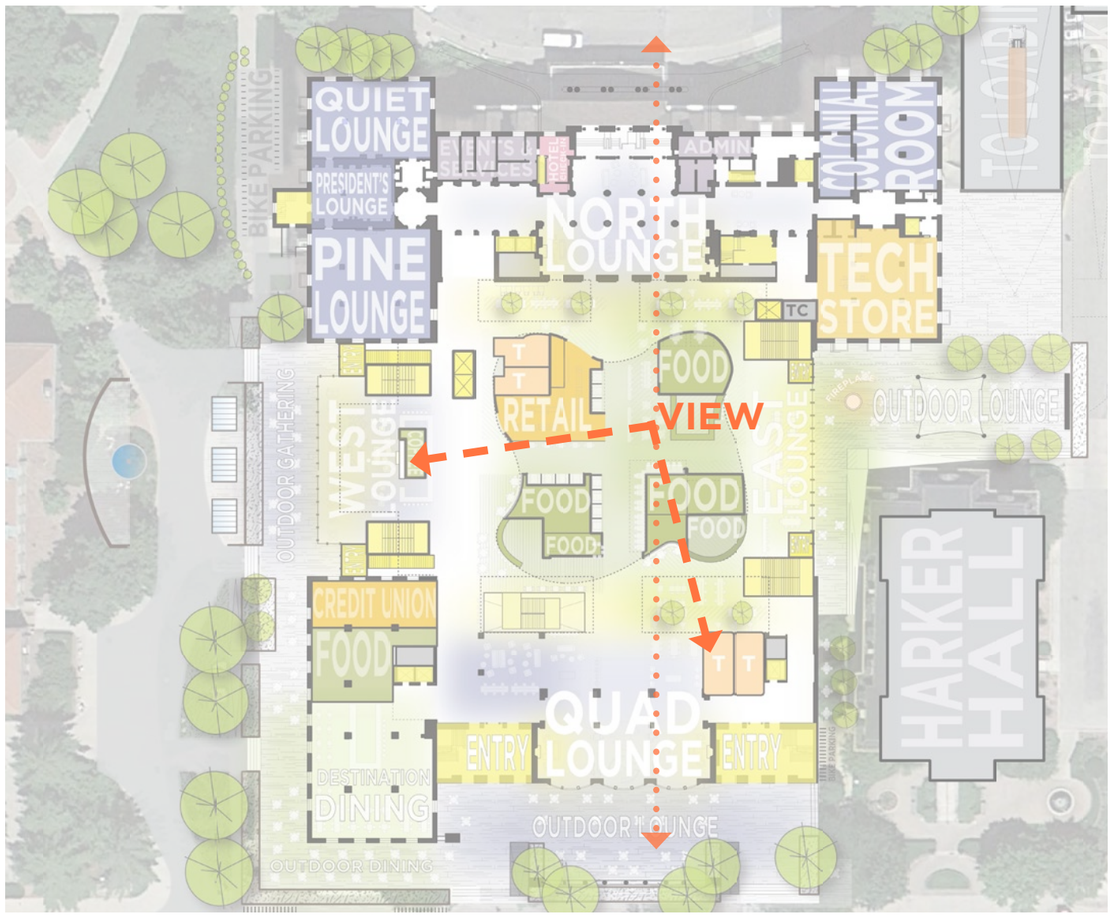


Dining

A central north-south path through the dining area provides visual and experiential linkage to the south lounge and the main quad.

Interior Renderings

Key Plan - Main Level



Dining

The dining area offers a variety of booth and table seating and provides visual connections and daylight from the south, west, and east.

Interior Renderings

Key Plan - Main Level

Quad Lounge

The design maintains the comfort and historic character of the quad lounge.

Interior Renderings

Key Plan - Main Level

Dining

This perspective illustrates the market hall layout and variety of dining venues and associated lounge seating. A new fire lounge is placed to the east, while the coffee house is located to the west.

Interior Renderings

Key Plan - Lower Level

Student Programming

This student programming venue on the lower level will be a great place to dance and hear live music, along with other performances.

Interior Renderings

Key Plan - Lower Level

Fitness Center

This area will provide a convenient, centrally-located venue for fitness and wellness classes. Skylights provide natural light into the lower level space.

Interior Renderings

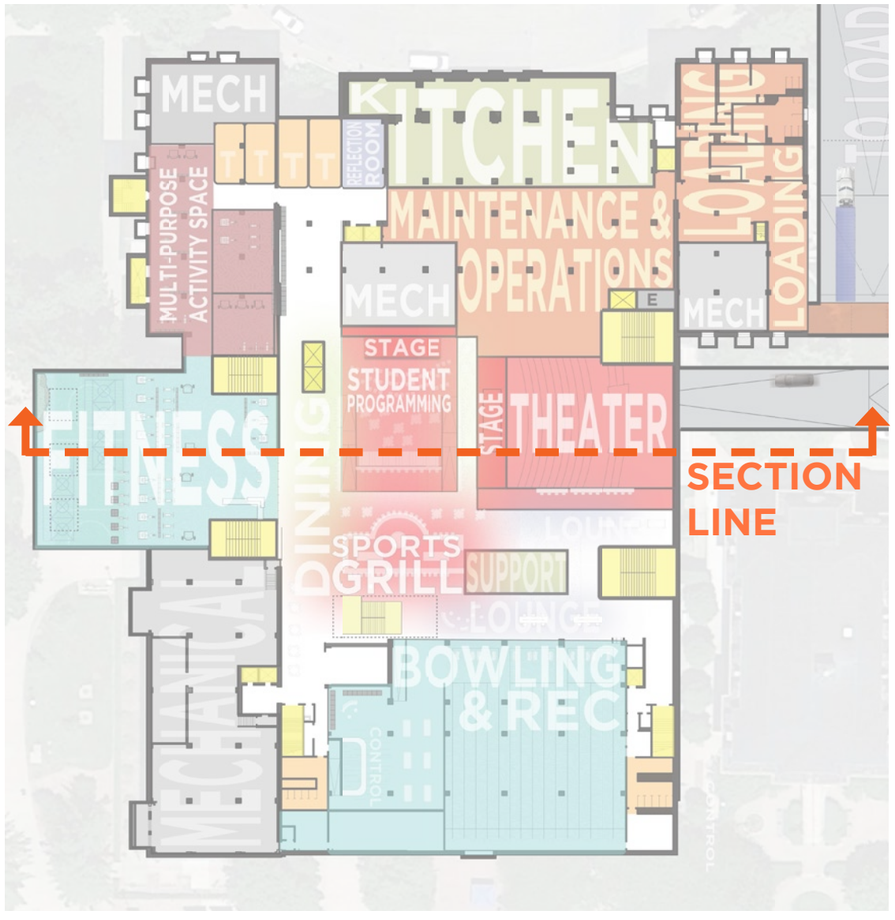
Key Plan - Lower Level

Lower Level

The lower level includes exciting new venues for food, movies, live performances, and fitness.

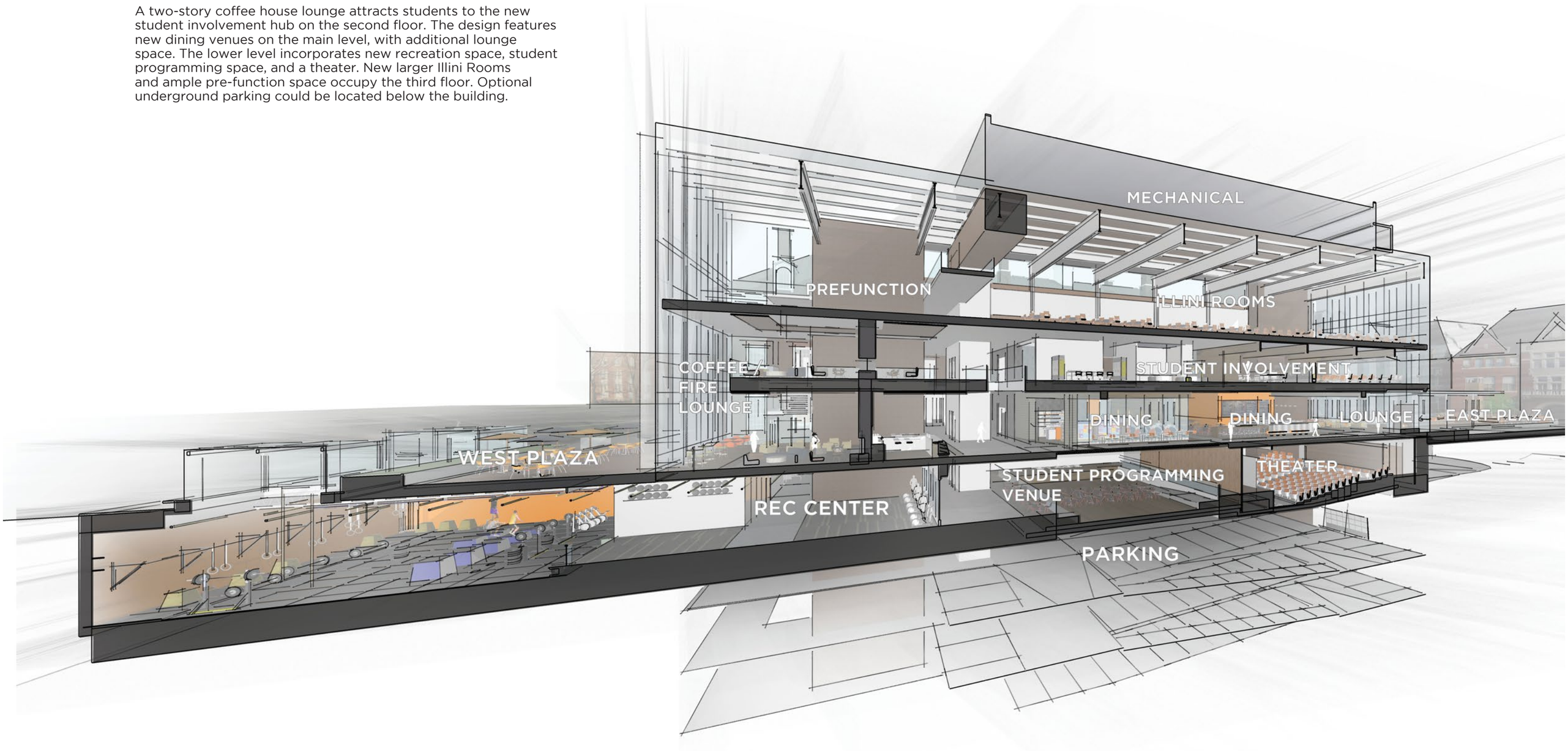
Section Diagram

Key Plan - Lower Level



East-West Section Diagram
Looking North Through The Illini Union

A two-story coffee house lounge attracts students to the new student involvement hub on the second floor. The design features new dining venues on the main level, with additional lounge space. The lower level incorporates new recreation space, student programming space, and a theater. New larger Illini Rooms and ample pre-function space occupy the third floor. Optional underground parking could be located below the building.



Interior Renderings

Key Plan - Level 2

Student Involvement and Collaboration

The student involvement hub includes a variety of flexible meeting spaces where students can work and collaborate.

Interior Renderings

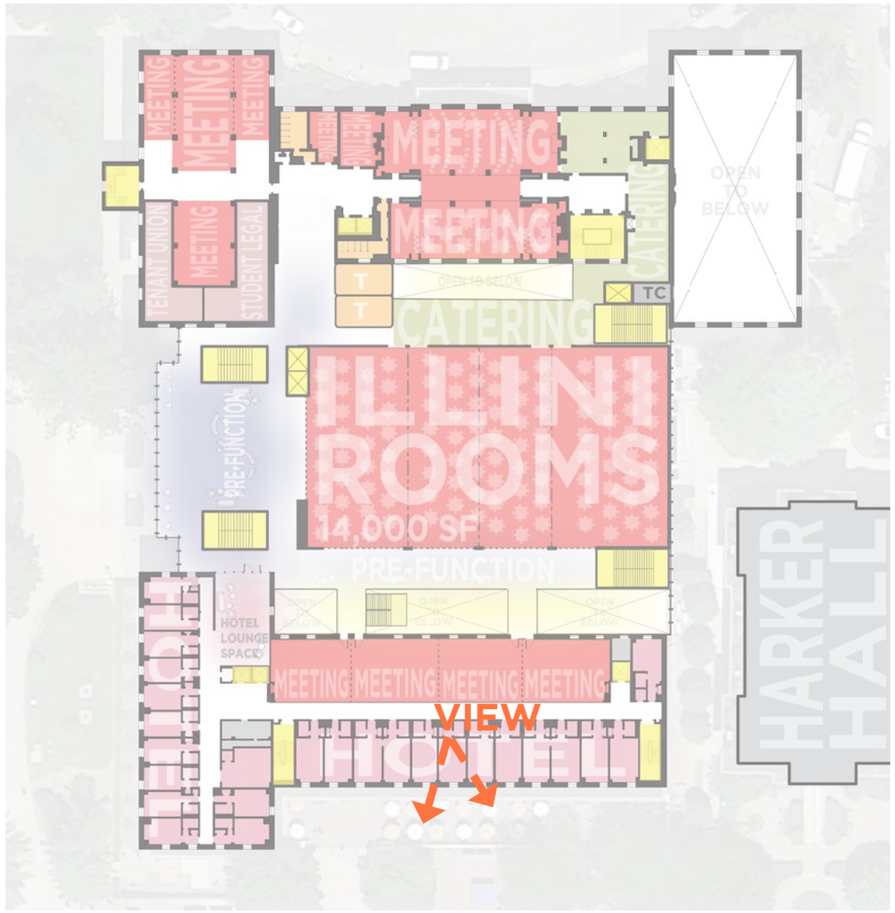
Key Plan - Level 3

Hotel Lounge

A branded hotel lounge on the third floor welcomes visitors to the Illini Union

Interior Renderings

Key Plan - Level 3

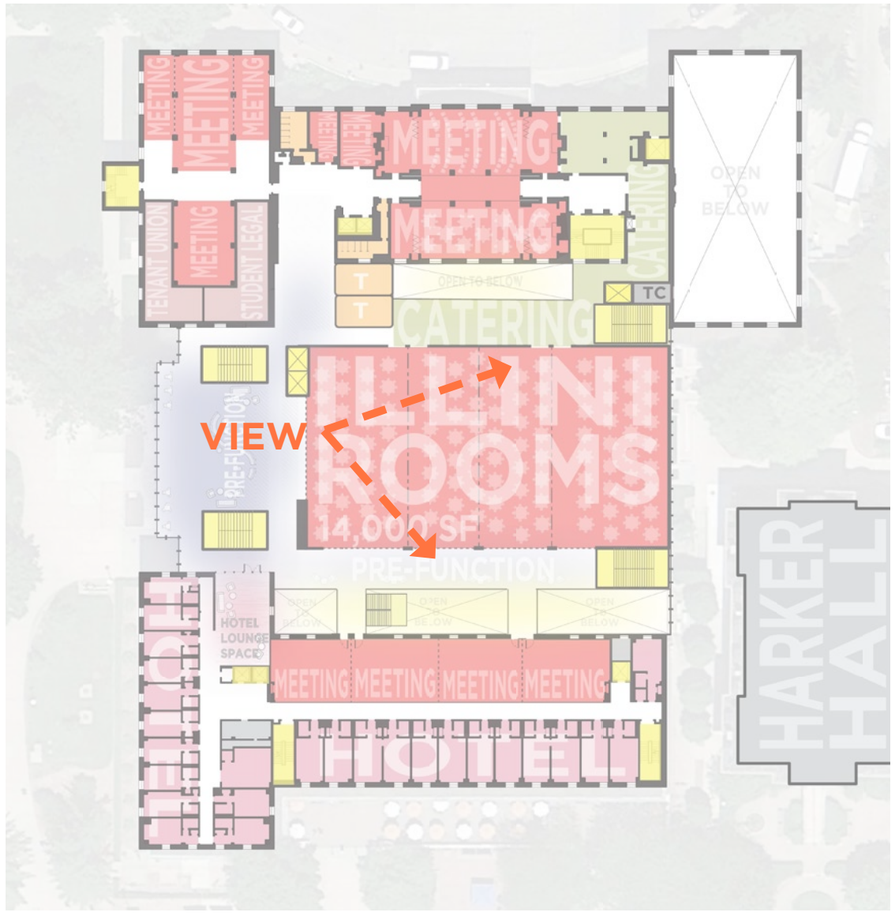


Hotel Room

Refurbished hotel rooms reflect Fighting Illini spirit and make for a memorable stay.

Interior Renderings

Key Plan - Level 3

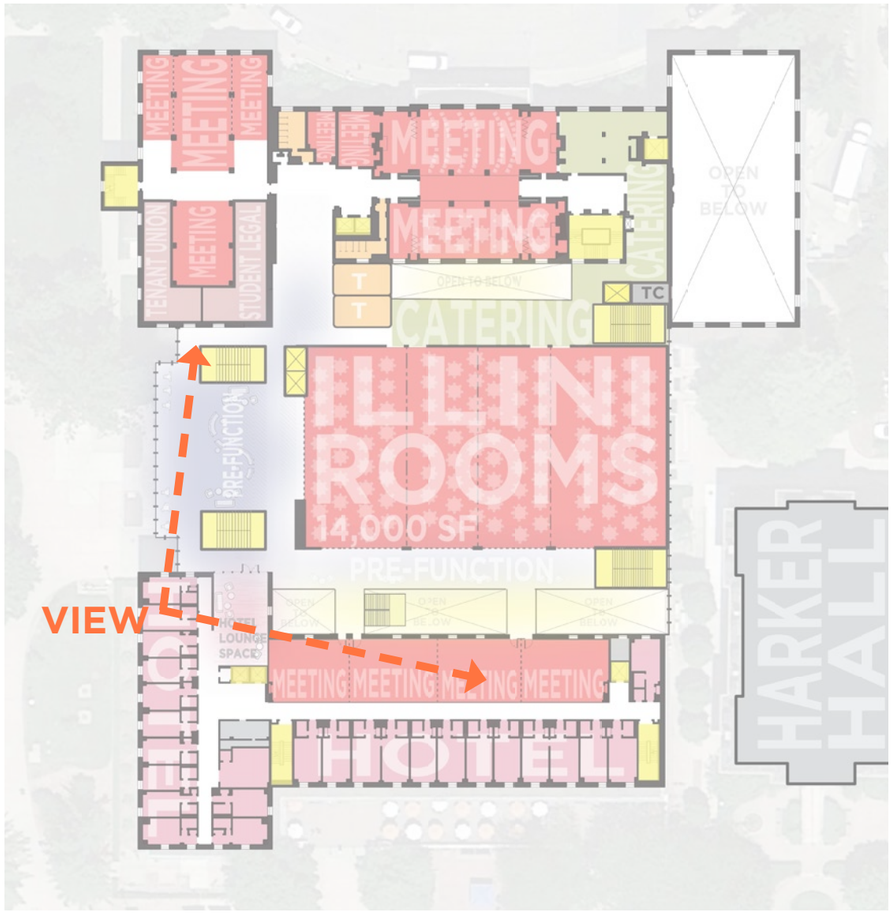


Illini Rooms

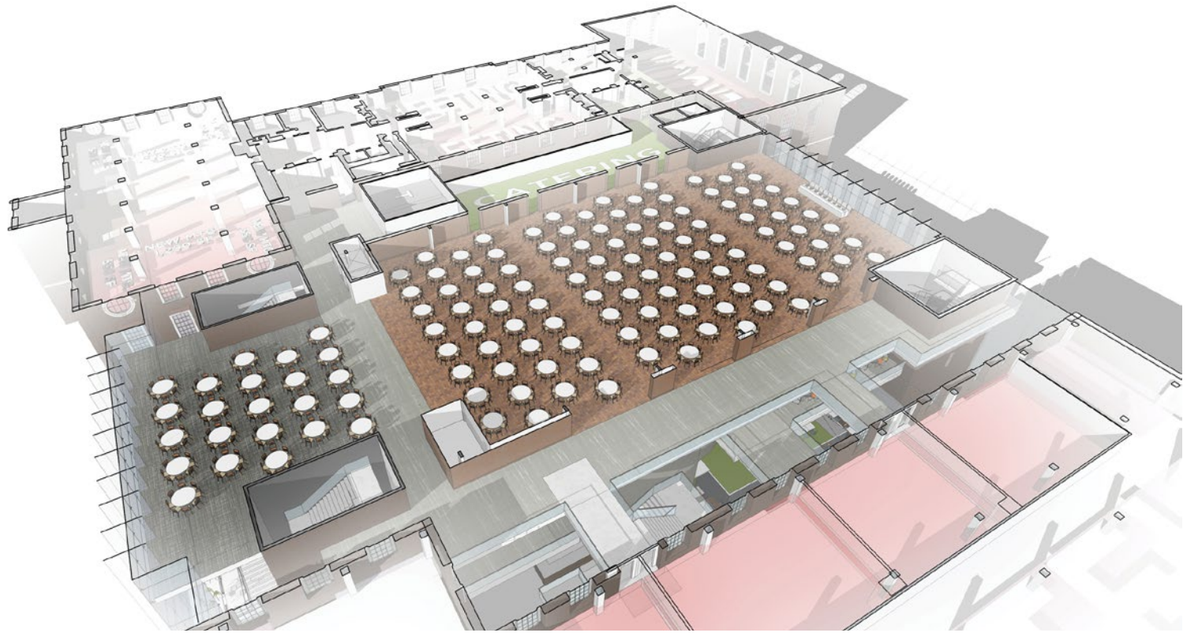
The new Illini Rooms on the third floor offer multiple event options, plenty of daylight, and views to the east and west. Clerestory windows frame views of the historic cupolas on the north and south buildings.

Interior Renderings

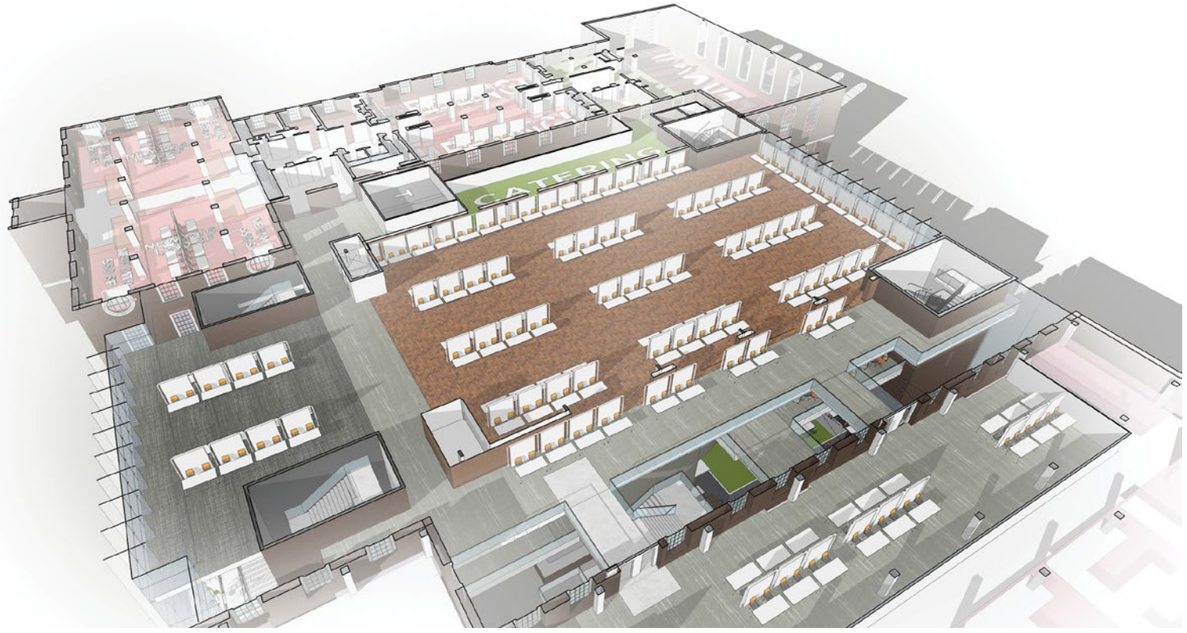
Key Plan - Level 3



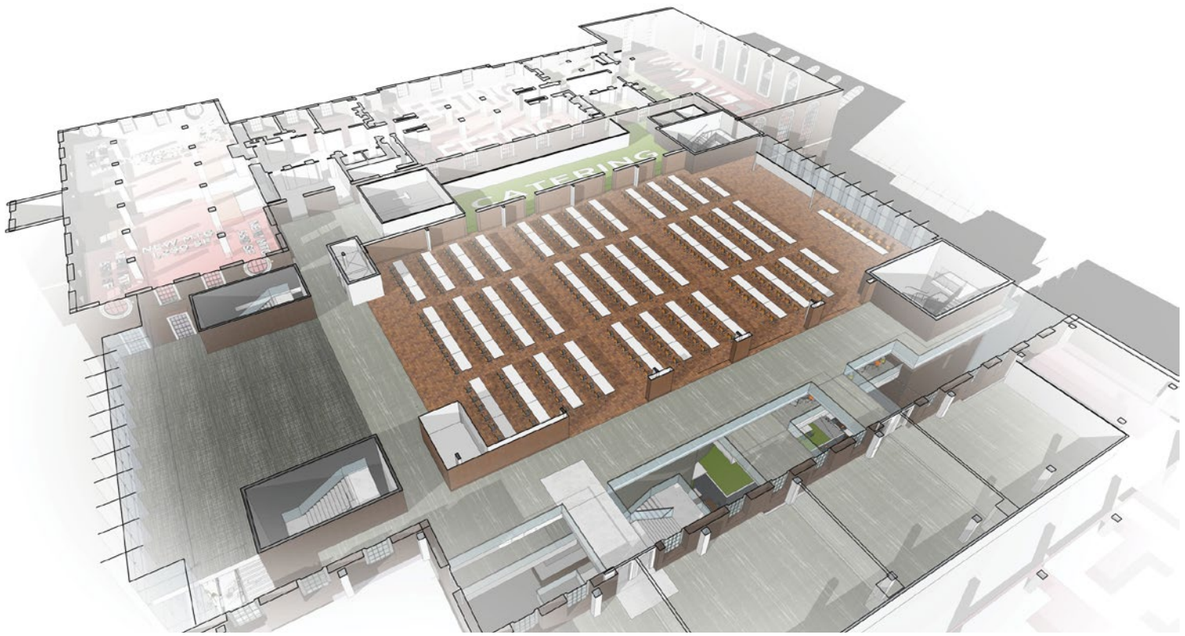
Illini Rooms - Round Tables Configuration



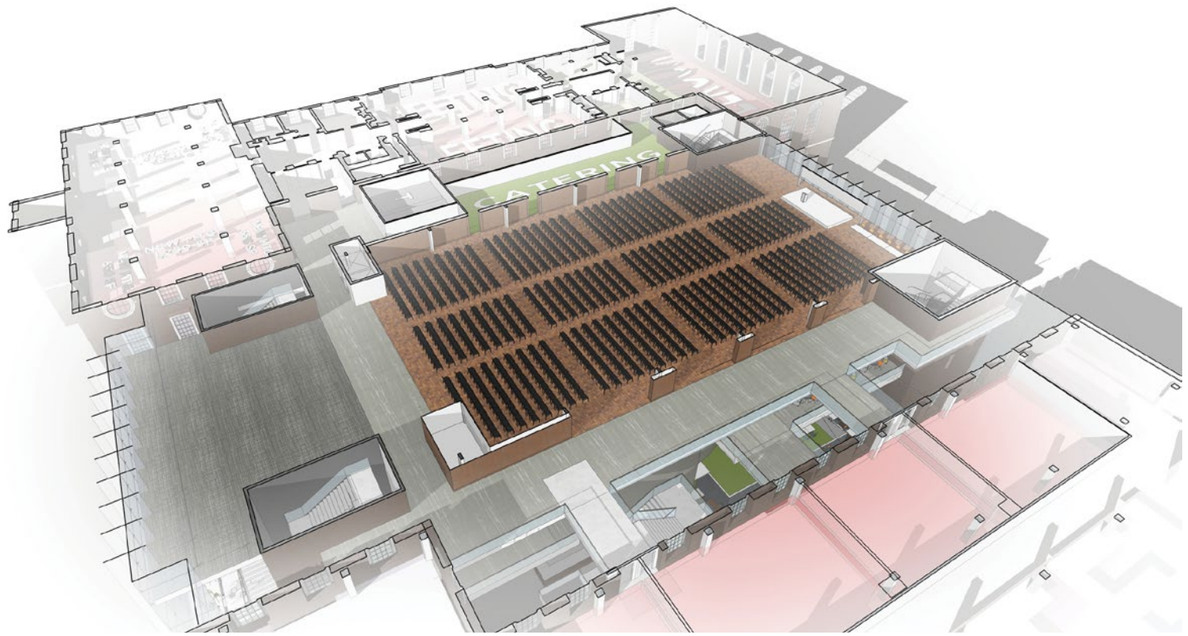
Illini Rooms - Career Fair Configuration



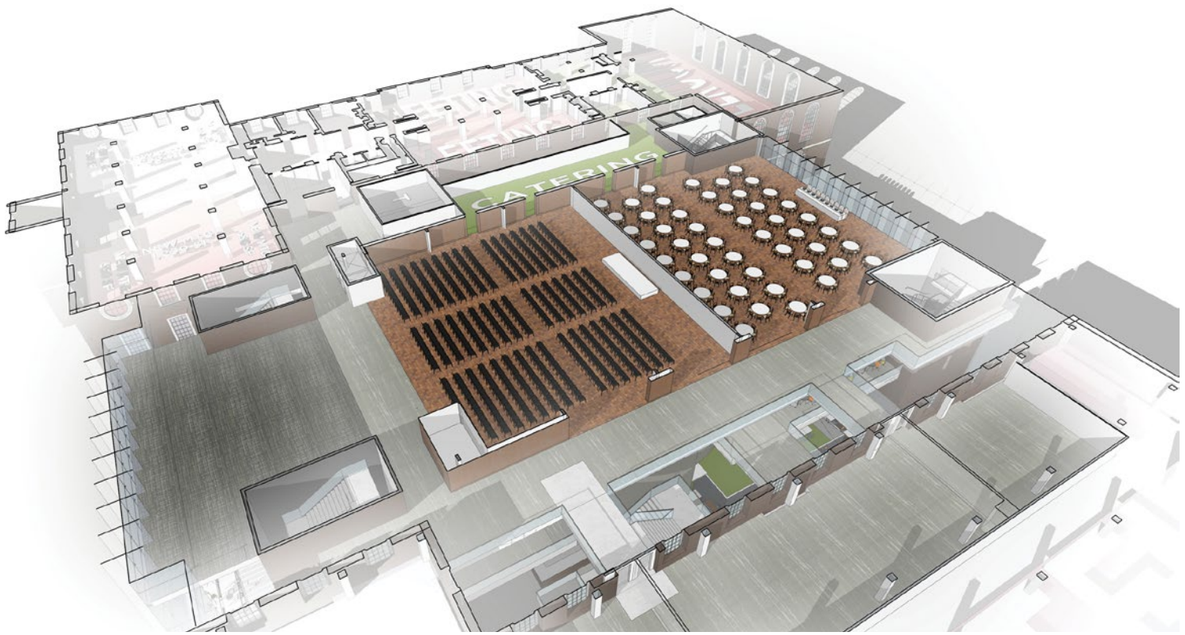
Illini Rooms - Classroom Configuration



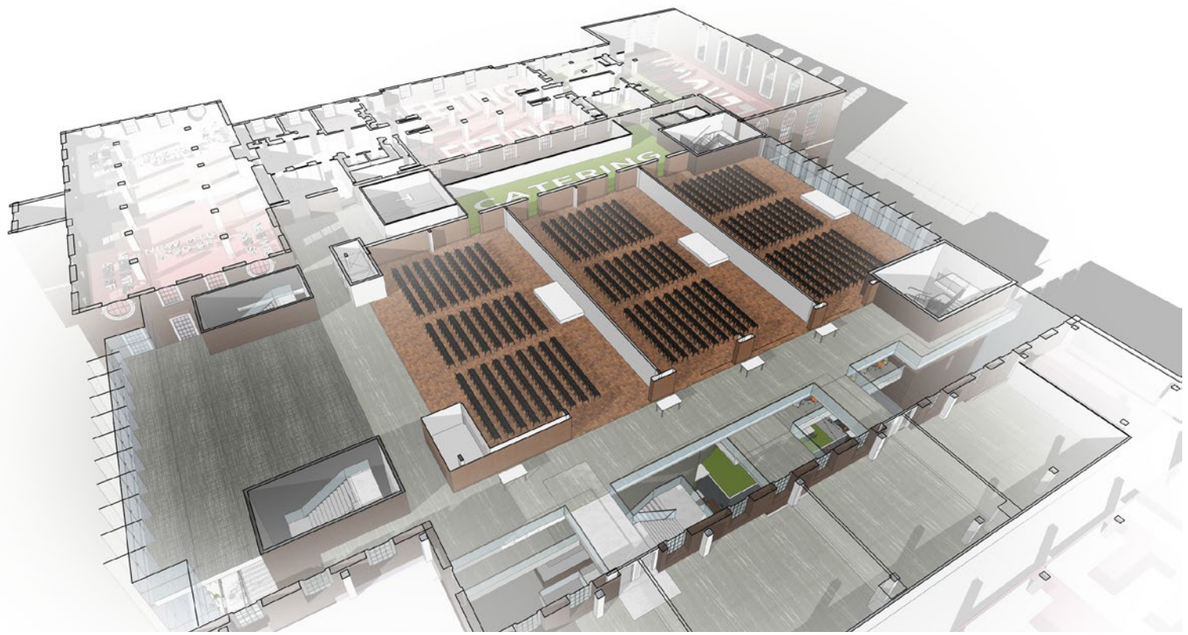
Illini Rooms - Theater Configuration



Illini Rooms - Two Room Configuration

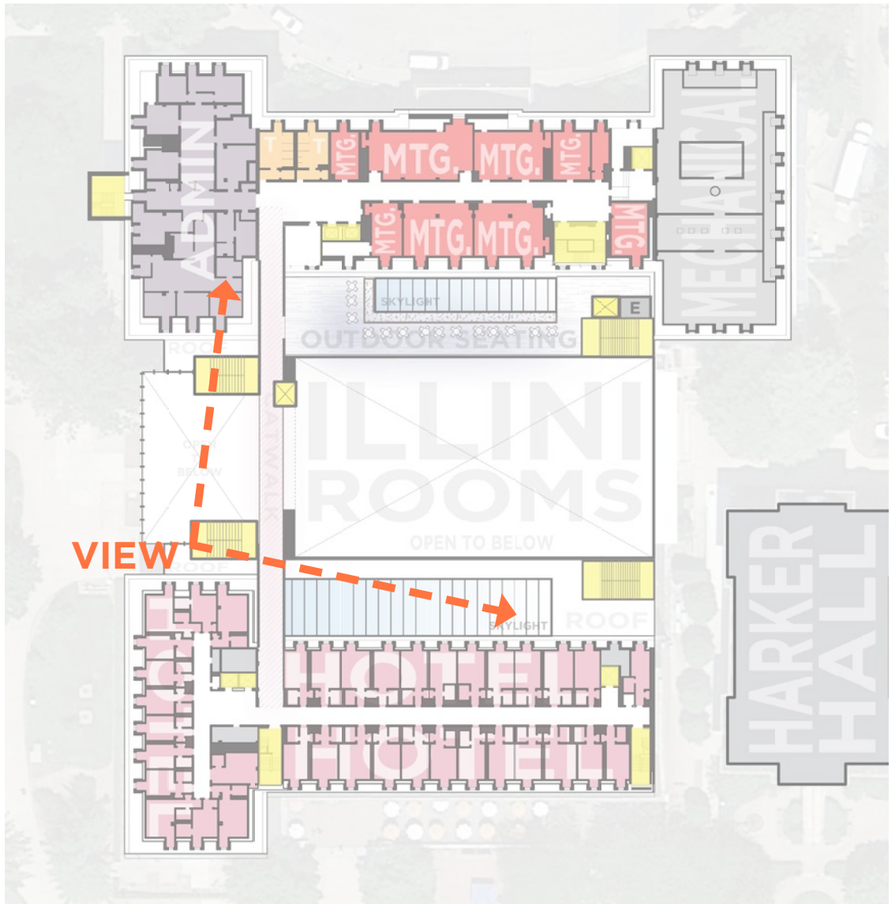


Illini Rooms - Three Room Configuration



Interior Renderings

Key Plan - Level 4



Level 4 Walkway

A new fourth floor walkway connects the north and south buildings. A rooftop patio and green roof can be found on this level.

Design Concepts & Strategies

Presentation Materials

Overview:

The architectural images shown in this section and the following talking points can be used to share the vision for the future of the Illini Union with University of Illinois stakeholders.

Presentation Talking Points:

- As compared to its peers, the existing Illini Union is significantly undersized for the student population that it serves. On average, peer campuses provide 6.2 gross square feet of student union/student, whereas the Illini Union provides roughly 3.5 gross square feet/student.

- Significant space deficiencies in the areas of lounge, dining, meeting, and student organization space are addressed in the Illini Union Master Plan through the addition of space.

- Alumni and guests to campus would be welcomed to a refreshed Illini Union Hotel, complete with enhanced branding and touches of Illini pride. New amenities for hotel guests would include a first level “Destination Dining” restaurant with a view of the Quad, additional patio seating adjacent to the Quad, and a fitness center on the lower level.

- Renovated and relocated Illini Rooms will provide contemporary conferencing facilities that are in close proximity to smaller meeting spaces. Added character, new pre-function space, and excellent views of Altgeld Hall and Harker Hall will make this a desirable meeting space and event venue. An increase in size will also allow the Illini Union to accommodate career fairs and other campus events which are too large to be held within the existing Illini Rooms.

- A “campus capital” survey of students found that the Illini Union is the most significant building on campus, as it was most frequently identified as a highly social, intellectual, symbolic, and restorative place. Widespread recognition of the building can be leveraged, and with reinvestment the Illini Union will have an even more prominent role on campus.

- With the addition of quiet meeting space, experiential dining, and lounge space, students will have better opportunities to learn, socialize, relax, and connect with the University of Illinois.

- Added prominence to student organization spaces will make it easier for students to explore opportunities to become involved. An enhanced design will provide flexibility and better opportunities and tools for collaboration.

- Lower level performance venues will attract and entertain students and guests.

- Lower level fitness space satisfies a need for recreation on the north side of campus.

- Underground parking will allow improve access and marketability of the Illini Union Hotel, dining venues, and conferencing and events venues.

- The redesigned Illini Union creates better accessibility into and throughout the facility. It provides a welcoming first floor experience with clear wayfinding, floor-to-floor connections, connections to the Quad, internal vistas of the Union’s offerings, and more daylight. With these changes, the Illini Union will be more inviting, more inclusive, and a great place to build community.

Budget and Timeline

Total Project Budget

Total Project

Overview

Costs for building projects at the University of Illinois are estimated using a total project budget, which includes estimates for all costs that a unit is anticipated to incur in the design and construction of a building project. These costs include “hard” building and site costs along with “soft” costs which represent owner costs and professional service fees. The hard cost estimates shown at right were prepared by Middleton Consulting; the soft costs were calculated using the standard budget formulas adopted by the Capital Programs Division of Facilities & Services. For purposes of the providing a total project budget, all the building and site work shown in the report, including the loading dock and two levels of underground parking are included in the “base” total project budget. Adding a third level of underground is shown as an “alternate.”

Additional Notes

Cannon’s report dated January 29, 2016 included an existing conditions assessment of the building. The report was taken into consideration when developing the scope of the architectural renovations and associated construction costs.The estimated construction cost has included the following:

- Roof replacement of the north and south buildings to address the existing roof, dormers, cupolas, and associated flashing.
- Tuckpointing / masonry restoration of the existing north and south buildings.
- Replacement of the existing windows in the north and south buildings with historical windows.
- Interior finish updates.
- Addressing accessibility in the existing restrooms.
- Modifications of the existing hotel rooms to accommodate four hotel rooms to meet the current accessibility requirements.
- Replacement or modification of the existing elevators.
- An allowance has been included to address misc. life safety issues noted in the report including non-compliant fire doors, hardware, guardrails/handrails.

TOTAL PROJECT BUDGET	Base		Alternate
CONSTRUCTION COSTS:			
North Building	$ 33,029,000		
Center Infill	47,862,000		
South Building	24,159,000		
Loading Dock + 2 Levels of Parking	11,024,000		
3rd Level of Parking			$ 5,950,000
10% Design Contingency	11,607,000		595,000
Subtotal	$ 127,681,000		$ 6,545,000
Furniture, Fixtures & Equipment (FFE)	10,500,000		
Audio-Visual Equipment	2,000,000		
Cost Escalation (5.25%/yr for 5 years)	40,866,000		2,095,000
Construction Subtotal	$ 181,047,000		$ 8,640,000
5% Bidding Contingency	9,053,000		432,000
10% Construction Contingency	18,106,000		864,000
Estimated Construction Total	$ 208,206,000		$ 9,936,000
OWNER'S COSTS, including:	10,636,000		545,000
Existing Systems Integrity			
Cleaning/Moving/Program Relocation			
Parking Reimbursement			
Art in Architecture			
Project Management			
Commissioning & Inspection			
Steam/Chilled Water Capacity Charges			
Technology Services			
PROFESSIONAL SERVICES, including:	27,958,000		1,433,000
PSC Basic Services			
PSC On-Site Observation Services			
PSC Post Construction Services			
PSC Supplemental Services			
A/V Design Fee			
FF&E Design Fee			
Other Special Consultants			
LEED Commissioning			
Reimbursables			
Printing			
LEED Registration			
Environmental Testing			
Geotechnical Investigation			
Existing Systems Verification			
Partnering			
Construction Manager Fees			
Construction Manager Reimbursables			
TOTAL PROJECT BUDGET	**$ 246,800,000**		**$ 11,914,000**

Phasing & Schedule

Phasing & Schedule

Overview

The phasing of the project will consist of two primary phases. The first phase consists of the demolition of the existing center infill building, the construction of the new center infill building, and the renovation of the south building. The north building will have work occurring in the lowest level including the loading dock and adjacent underground utilities impacted by the new loading dock design. The second phase will consist of the renovation of every other level of the north building.

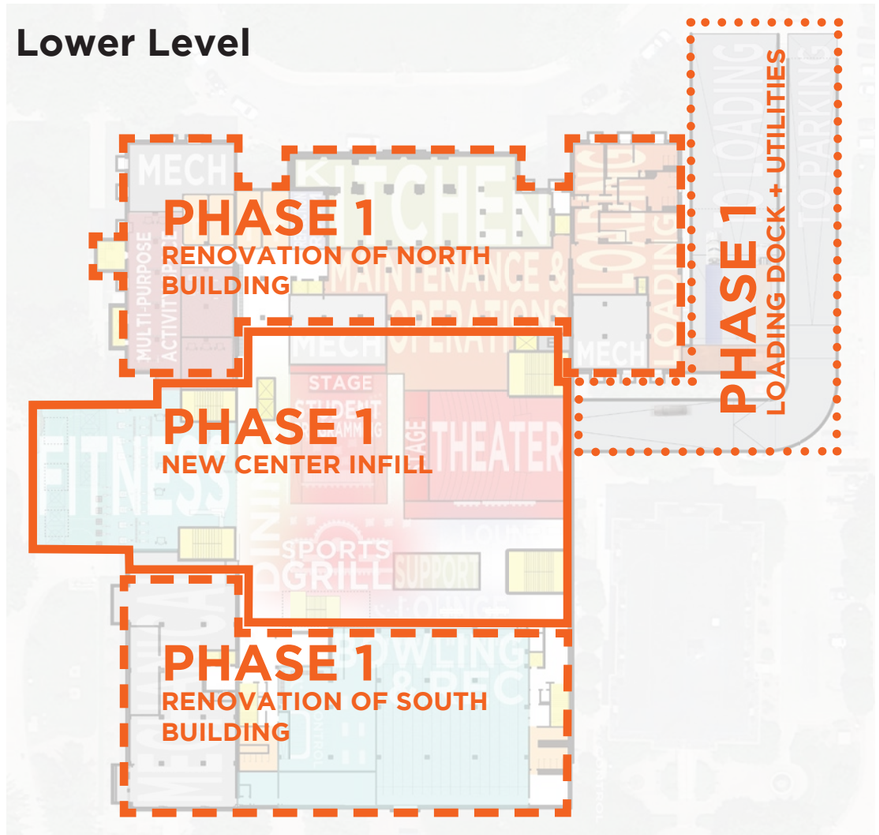
Key Points

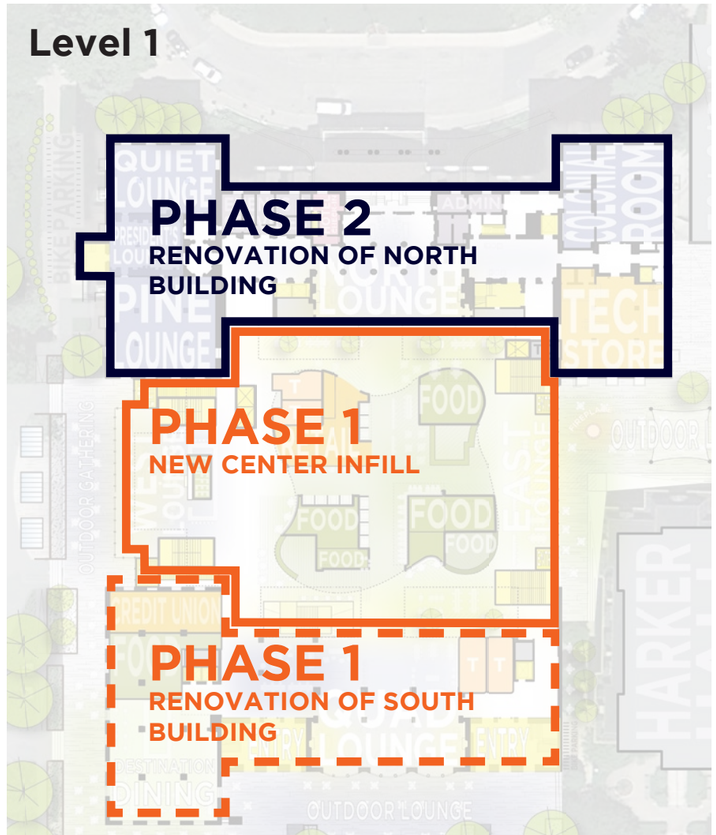
Phase 1

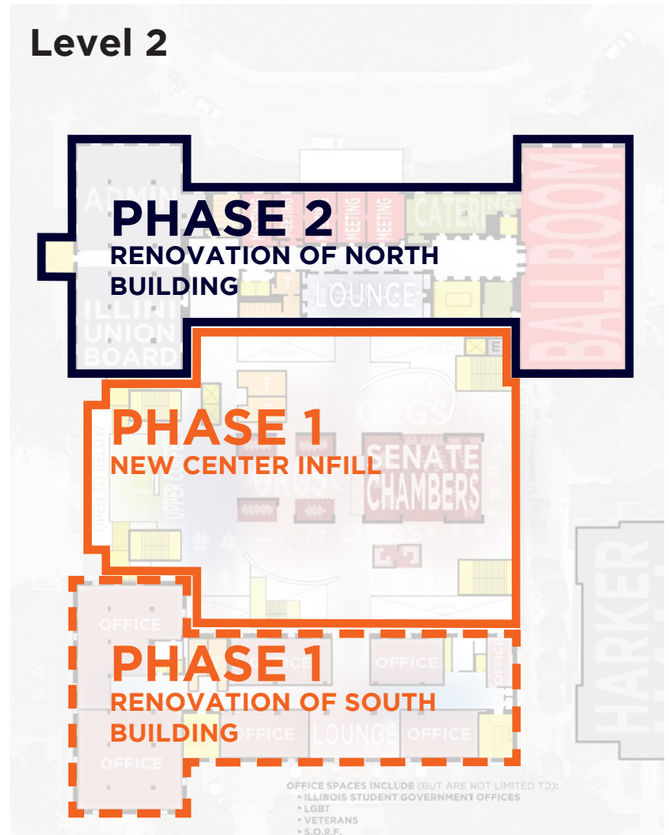
- Food service in lower level will not be operational during phase 1
- Hotel will not be operational during phase 1
- There will be a period of time during phase 1 when the loading dock will be under construction. Deliveries will need to be rerouted to an alternate location during this period.

Phase 2:

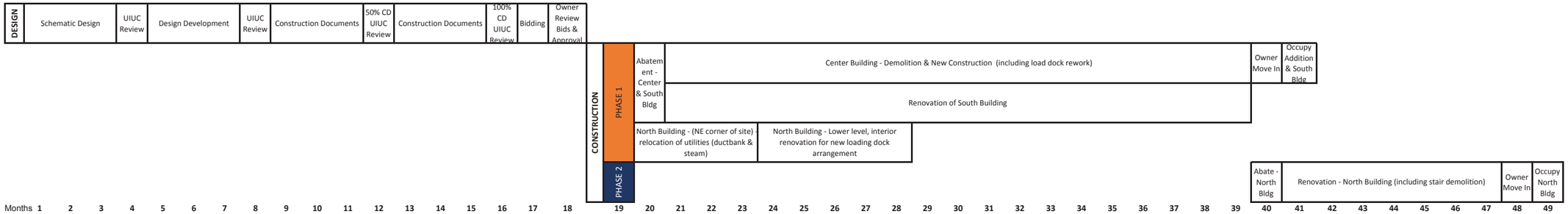
- Hotel check in will need to be relocated temporarily to the south wing.







Phasing & Schedule

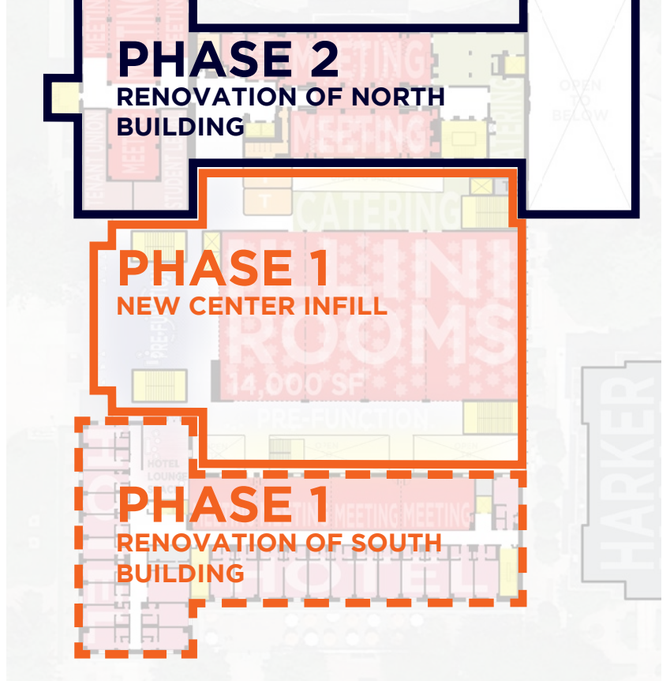


Estimated Design Start
Fall 2020

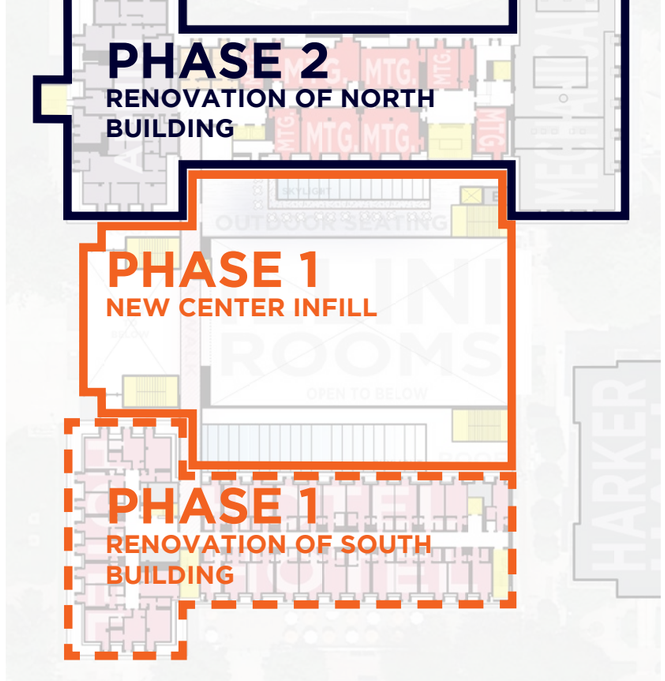
Estimated Construction Start
Spring 2022

Estimated Construction Completion
Fall 2024

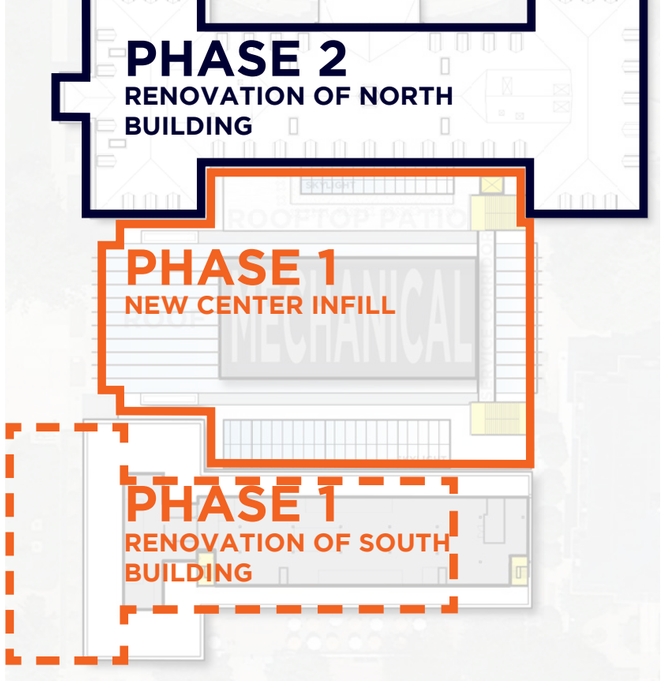
Level 3



Level 4



Penthouse Level



APPENDIX

Table of Contents

Dewberry WORKSHOP

Campus Visits

Campus Visits #1 & #2

Campus Visit #1 & #2 | Programming | August 29-31 and September 28-29

Introduction:

During Campus Visit #1 the design team met with a variety of Illini Union stakeholders in order to understand the program needs of the Illini Union. As a follow up, three programming workshops were held during Campus Visit #2. The following pages document the main activities of Campus Visits #1 and #2. For additional detail and information regarding the functional area meetings and focus group meetings, refer to the project meeting minutes.

Interviews and Focus Groups (Campus Visit #1):

Over a 3-day period in August 2016, the design team met with dozens of members of the campus community in a series of focus group sessions and interviews. Groups engaged during these sessions included:

Core Committee Meetings

Functional Area Meetings (Occupy Space in the Illini Union):

- Hotel
- Student Programs and Activities
- Office of Registered Student Organizations
- Student Org. Resource Fee
- Office of Volunteer Programs
- Illinois Leadership Center
- LGBT
- Student Legal Services & Tenant Union
- University of Illinois Community Credit Union
- Veterans' Lounge
- McKinley Health Resource Center
- Human Resources and Administrative Services (HRAS)
- Business Affairs
- Parent and Family Programs
- Marketing & Administrative Offices
- Document Services
- Rec. Room
- Tech Zone
- Quad Shop & Bookstore

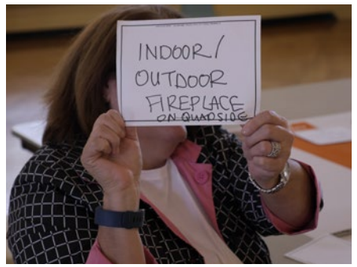
Focus Groups:

- Students
- Faculty/Staff
- Renee's Lunch Bunch
- Illini Union Board
- Facilities and Building Services
- IT and CLASS
- Retail Food Services
- Building Supervisors
- Multimedia & Event Services
- Student Building Managers
- Alumni

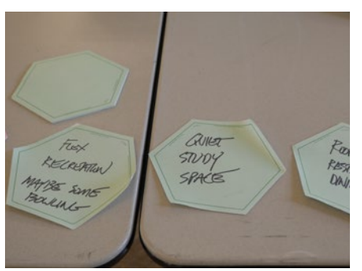
Priority Mapping & Spatial Relationships (Campus Visit #2):

Over a 2-day period in September 2016, the design team held workshops with the Core Committee, the Faculty/Staff Vision Team, and the Student Vision Team. The general themes that emerged through the workshops:

- The Illini Union is a student-centered building and should have spaces for collaboration, performance, lounging, and dining.
- Illini spirit should be felt within the Illini Union.
- Energy and excitement should be brought to the main level of the Illini Union by making it feel more open. Main level dining, coffee, and lounge space should contribute to the energy.
- Student-centered spaces should be given priority access to Quad views. In general, the building should feel more connected to the Quad.





Initial Impressions - Core Committee

Overview

The Core Committee discussed the current roles and perceptions of the Illini Union as well as their ideas for the building's future.

Program Discussion:

What program spaces should be located within the Illini Union?

- Expressive space like an auditorium
- Parking to support restaurants
- Places for collaboration, innovation, and cross-pollination
- The Illini Union is a student center, and it should stay that way
- Dining venues. Lower level food court inhibits revenue generation
- Include a space to watch sports on a big screen
- Food. The Illini Union has the only Qdoba on campus and some students visit just for that
- A place for transformative learning. The Illini Union has over 600 student employees. It offers intern programs, volunteer opportunities, connections to academic programs, political debates, and leadership centers
- A "welcome center" as a critical first stop for international students
- Student organization space which is currently too small (60 spaces for 1,400 groups)

General Discussion:

- The Illini Union shouldn't compete with other campus facilities
- Students like that the Union represents something "bigger than them"
- There is a "decentralized" culture on campus
- The Illini Union is a "neutral space"
- Not enough dance space with proper flooring on campus
- McKinley Health (union location) provides vaccine checks and vaccines to international students
- The University currently broadcasts Illini football games in Mandarin, and the Union shows international events like the World Cup and Olympics
- A student survey identifies desired retail tenants
- Food court and hotel have not seen significant investment and need attention
- Everyone who walks into the Illini Union should be able to identify oneself
- Courtyard and Starbucks are primary locations that foster collaboration, innovation, & discovery

Initial Impressions - Student Vision Team

Overview

Students discussed the current roles and perceptions of the Illini Union as well as their ideas for the building's future.

Program Discussion:

What program spaces should be located within the Illini Union?

- Power napping often happens within the Illini Union
- Include a space to watch sports on a big screen
- Food. The Illini Union has the only Qdoba on campus and some students visit just for that
- The union should be a place to relax and take an on-campus break
- The Illini Union should be welcoming, as it is the first stop for international students arriving on campus.
- A big auditorium for movies and other events
- Pop-up shops for winners of student competitions
- A home for registered student organizations
- A music venue
- A meeting place
- A place for bonding with teammates and friends

General Discussion:

- The Illini Union feels safe, and people spend time in safe places.
- Alcohol should be served- more people might visit
- Students feel like they cannot move furniture because it might break
- It feels like many different countries are represented on campus
- The Illini Union could be a "scene" for events like soccer watch parties and music performances
- Regular music within the Union is nice
- Illinois is not a "rah rah rah" university
- It is difficult for students to become attached to the union in two years
- Special union programming is held during the first two weeks of each semester
- Athletic teams bowl in the Union to bond
- Not many students know all of the spaces and programs that exist within the Illini Union

Initial Impressions - Faculty/Staff Vision Team

Overview

Faculty and staff discussed the current roles and perceptions of the Illini Union as well as their ideas for the building's future.

Program Discussion:

What program spaces should be located within the Illini Union?

- Illini Union should keep lounge and dining space
- Performance space: black box theater, night club, auditorium, and/or movie theater
- Coffee and grab and go food
- Meeting/Conferencing space - consider smaller, subdividable spaces for the Illini Rooms
- Potential to add more hotel rooms
- Parking for conferences
- Welcoming stop for campus tours
- Colonial buffet offers the "classiest" food on campus
- Fast casual dining downstairs

General Discussion:

- I-Hotel is close to athletics, has meeting rooms equipped with technology, and offers convenient parking; however, Illini Union gives guests a campus feel
- Illini Union doesn't show well on campus admissions' tours. Prospective students are not impressed.
- Students don't feel a strong connection to the Illini Union. On other campuses they feel like the union is "their own"
- The east hallway of alumni portraits doesn't seem relevant to today's students. The portraits suggest that the University values history and tradition, but not necessarily diversity
- Change within the Illini Union can be difficult because the practices and tied to history and culture
- Most students don't feel like the Union is a welcoming place
- The Illini Union should be a welcoming place to all students, and especially welcoming to freshmen, international, and transfer students who are new to campus

Priority Mapping

Overview

This exercise was conducted to establish a set of program priorities for the project. A common set of spaces and qualities were given to each of the groups at right, and “write-in” ideas were then added. Each group arranged spaces and qualities from lowest priority to highest priority. Through discussion the groups arrived at their priority map.

Core Committee

High Priority
- Space for collaboration
- Illini spirit
- Outdoor gathering space
- Student organization suite
- Auditorium
- Coffee house
- Food venues
- Accessibility
- Cultural exchange
- Conference space and meeting rooms
- Quad connection
- Live music/performance

Medium Priority
- Bowling and Rec
- Hotel
- Quiet Study
- Fitness & Cardio

Low Priority
- Fish Tanks
- Alumni Portraits

Faculty/Staff Vision Team

High Priority
- Space for collaboration
- Illini spirit
- Outdoor gathering space
- Student organization suite
- Auditorium
- Coffee house
- Food venues
- Large event space

Medium Priority
- Bowling and recreation
- Better accessibility and wayfinding
- Performance venue
- Higher quality restrooms

Low Priority
- Hotel
- Computer store
- C-Store
- Meditation space
- Art gallery

Student Vision Team

High Priority
- Outdoor gathering space
- Student organization suite
- Space for collaboration
- Auditorium
- Coffee house
- Food venues
- Illini spirit
- Quiet study
- Innovation lab
- Computer store
- Bowling with food
- Lounge
- Student retail

Medium Priority
- Music practice space
- Dance and fitness studio
- Places to nap

Low Priority
- Hotel rooms
- Formal art gallery

*Orange highlighted text denotes shared “high priorities” across all three groups.

Spatial Relationships

Overview

This exercise was conducted to establish a set of spatial priorities for the project. A common set of spaces were given to each of the groups at right, and "write-in" ideas were then added. Each group placed the spaces where they believed they were well-located within the building and in relation to one another. Through discussion the groups arrived at their spatial relationship model.

Core Committee

Priorities

- Meeting rooms and administrative offices located towards the north building
- Underground parking
- Lounge space overlooking the Quad
- Dining venues located on Level 1
- Coffee located on the main level
- Additional outdoor seating
- Green roof
- Student services located in the south building
- Hotel located between the north and south buildings
- Additional fireplaces in the middle building

Faculty/Staff Vision Team

Priorities

- Meeting rooms, administrative offices, event space, and support space located towards the north building
- Underground parking
- Coffee located on the main level
- Dining venues throughout the core of Level 1 and Level 2
- Lounge space overlooking the Quad
- Welcome desk at north and south entry
- Dining and student space on the main level, facing the Quad
- More outdoor patio space on the Quad
- Dining, coffee, and lounge space on the main level, facing the Quad
- Student involvement space overlooking the Quad

Student Vision Team

Priorities

- Event space and administration towards the north building
- Recreation, support, and parking on the lower level
- Lounge space overlooking the Quad
- Underground parking
- Dining venues and lounge in the core of Level 1
- Coffee located on the main level
- Lounge with fireplace, coffee, and dining on multiple levels facing the Quad
- Student leadership on upper levels
- Rooftop dining and lounge space
- Quiet study in the core on upper floors

*Orange highlighted text denotes shared priorities across all three groups.

Campus Visit #3

Campus Visit #3 | Concept Options | October 24-25, 2016

Overview:

During Campus Visit #3 the design team presented two potential design solutions that incorporated the feedback from the previous meetings. As a major occupier of space, the ballroom (Illini Rooms) location was designated in the name of the design schemes. In both schemes, the existing courtyard building would be demolished, and a new infill building would be built in its place. In the proposed "Illini Rooms Up" scheme, the Illini Rooms would occupy space on the third and fourth floors of a new infill building, and in the proposed "Illini Rooms Down" scheme, the Illini Rooms would occupy space on the lower level and the first floor of a new infill building. The execution of the remainder of the designs was affected by the location of the Illini Rooms.

In three sets of workshops (Core Committee, Faculty/Staff Vision Team, and Student Vision Team), two design models were presented, and the groups then provided feedback on the designs before adding, removing, and reconfiguring the program in order to improve both designs.

Ultimately, preferred design elements were cited from both designs, but as a whole, *the "Illini Rooms Up" scheme was preferred by all groups.*

General Design Summary

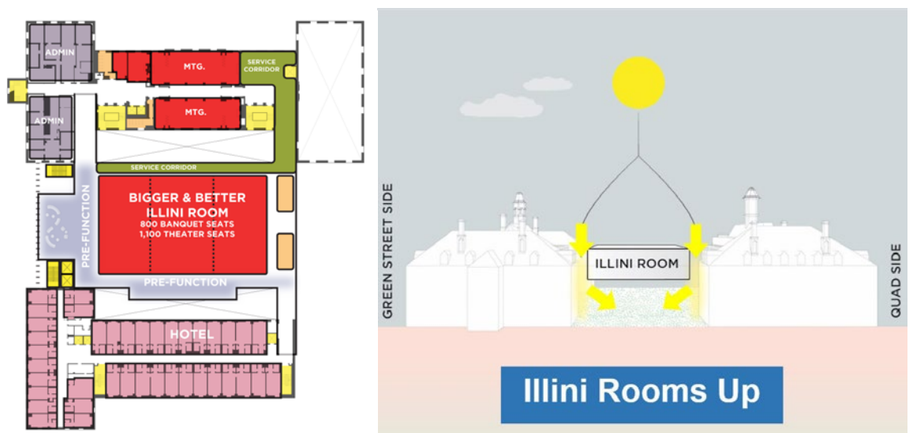
At this stage of the design process, the locations of the Ilini Rooms, student organizations, dining, and lounge spaces differentiated the "Illini Rooms Up" concept from the "Illini Rooms Down" concept. The following characteristics were generally common across both designs:

- Hotel rooms remained concentrated in the south building
- Administrative offices and meeting spaces remained within the existing office areas
- Building entrances remained in their existing locations and underground parking added
- Additional meeting spaces were added where possible
- Student organization areas were enlarged and more lounge space was added
- Performance venues were added on the lower level

Strengths of the Design Concepts

"Illini Rooms Up"

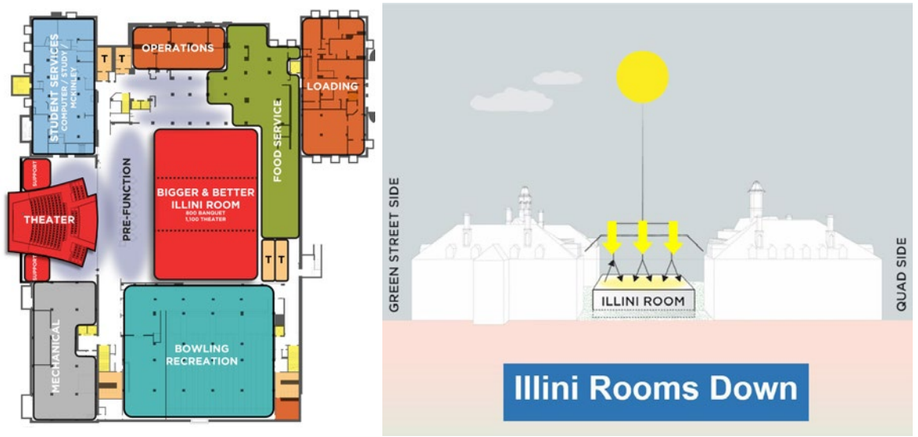
- Illini Rooms located on Level 3 of an infill addition. Opens the first floor visually and allows for exciting dining, coffee, on lounge venues all on the main level. The design brings energy, convenience, improved wayfinding, and strong connections to the Quad.



Illini Rooms Up (on Level 3)

"Illini Rooms Down"

- Illini Rooms located on the lower level with visual connections from Level 1. Allows for a variety of dining experiences and student centered spaces on the upper floors of an infill core. A breathtaking fourth floor lounge with glass roof would allow natural light to penetrate the entire core through openings in the floors.



Illini Rooms Down (on Lower Level)

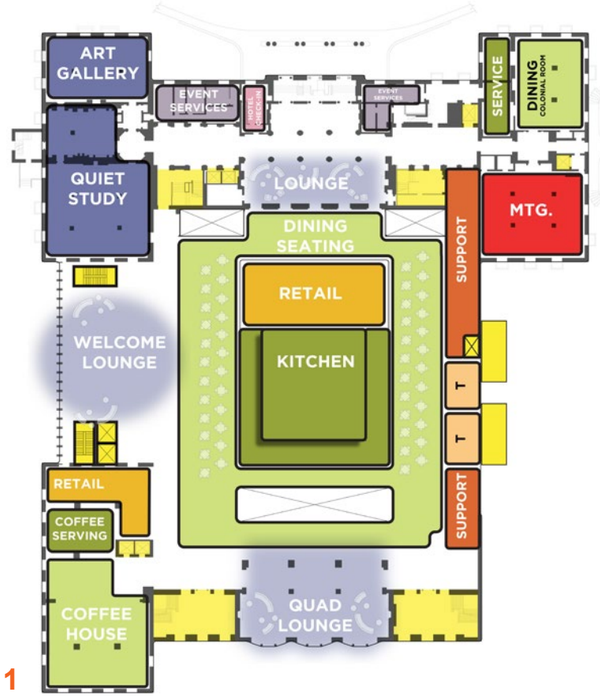
Two Design Concepts

“Illini Rooms Up”

Overview

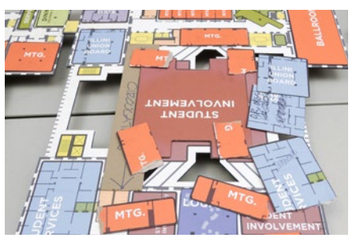
In the “Illini Rooms Up” design, the Illini Rooms are relocated to the third floor of a new infill building and expanded to host larger events than currently possible. Adequate pre-function space is created, and the entire conferencing space has views of historic Altgeld Hall and Harker Hall. The floor plan of Level 1 becomes more open to provide visual connections within the Illini Union and to the Quad. Dining venues are moved from the lower level to Level 1, and a coffee venue and student lounge provide excellent views of the Quad.

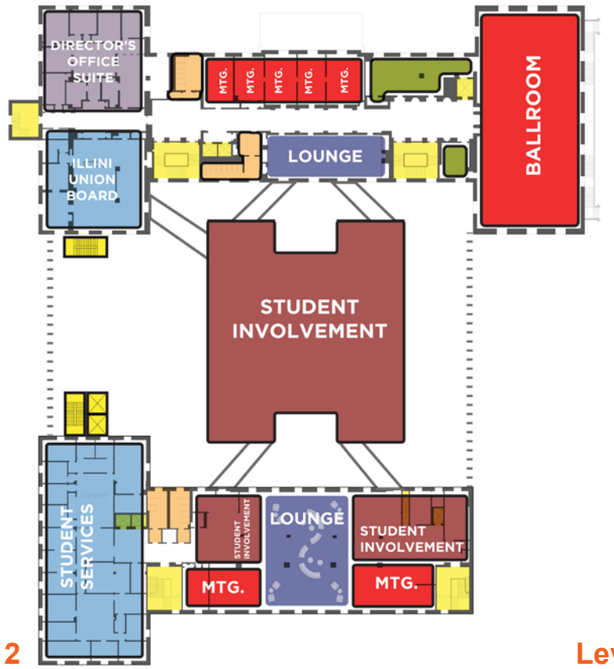
Lower Level



Level 1

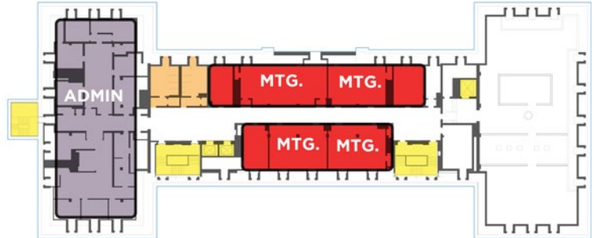
Floor plan models used during Campus Visit #3

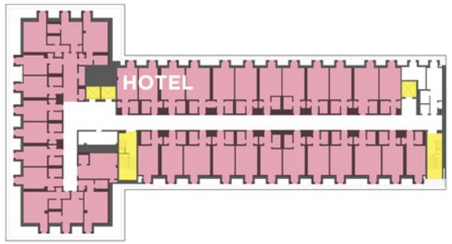




Level 2

Level 3



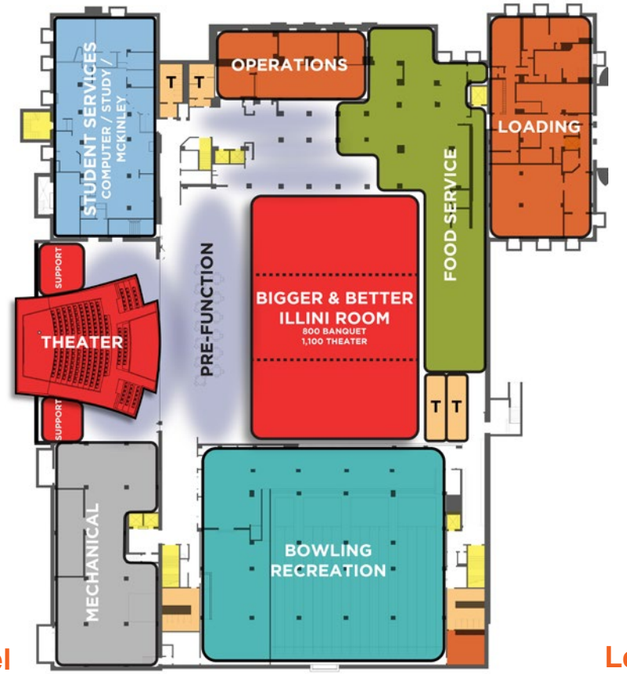


Level 4

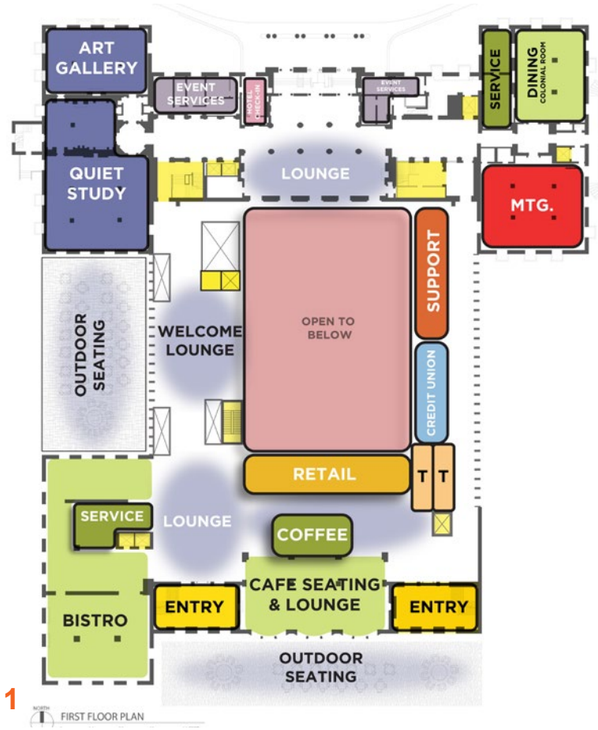
“Illini Room Down”

Overview

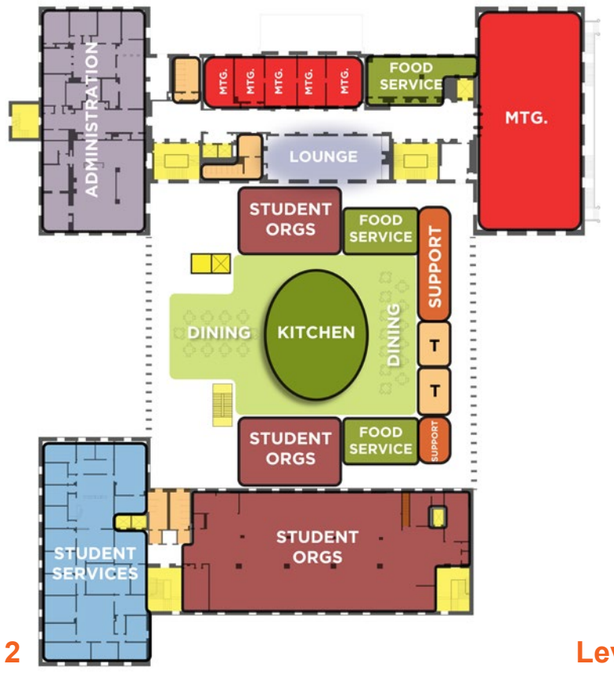
In the “Illini Rooms Down” design, the Illini Rooms are relocated on the lower level of a new infill building and expanded to host larger events than currently possible. Wayfinding is also improved through views into the Illini Rooms from the main floor. Outside of the Illini Rooms design, connections to the Quad are maintained through a main level lounge in the south building, and exciting dining, lounge, and student involvement space fills the core of the building on the levels 2, 3, and 4. A largely glass roof covers Level 4, and light fills the rest of building through a series of large floor openings.



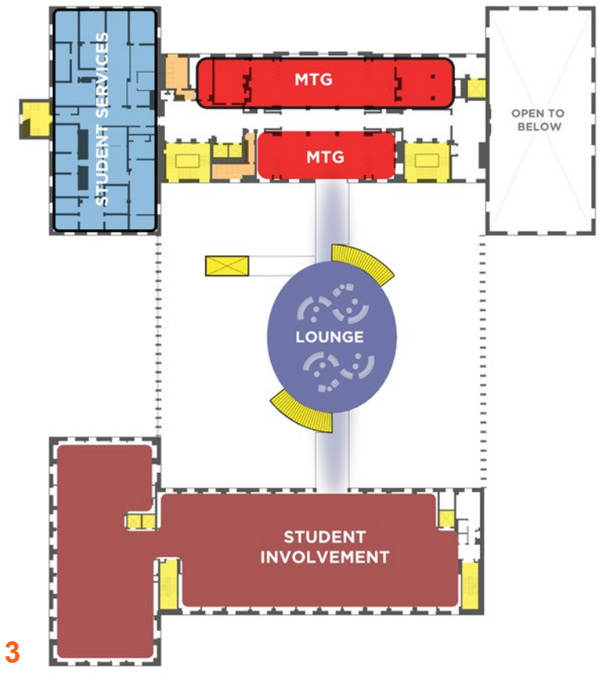
Lower Level



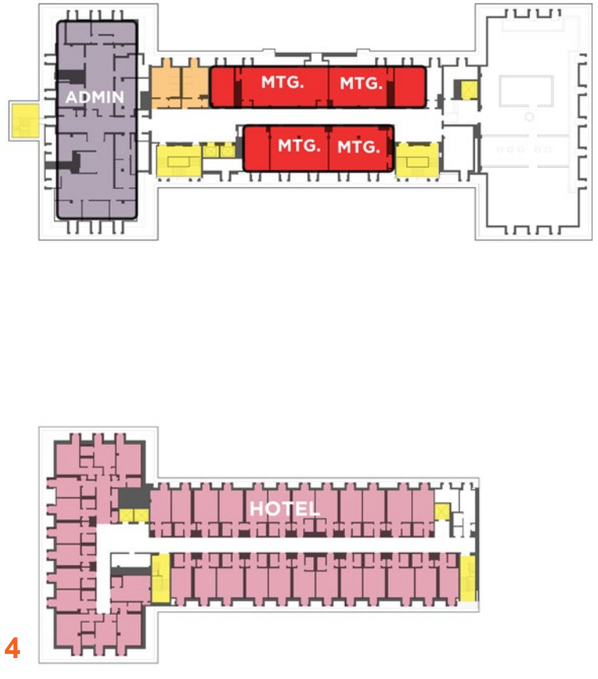
Level 1



Level 2



Level 3



Level 4

Evaluating the Design Concepts

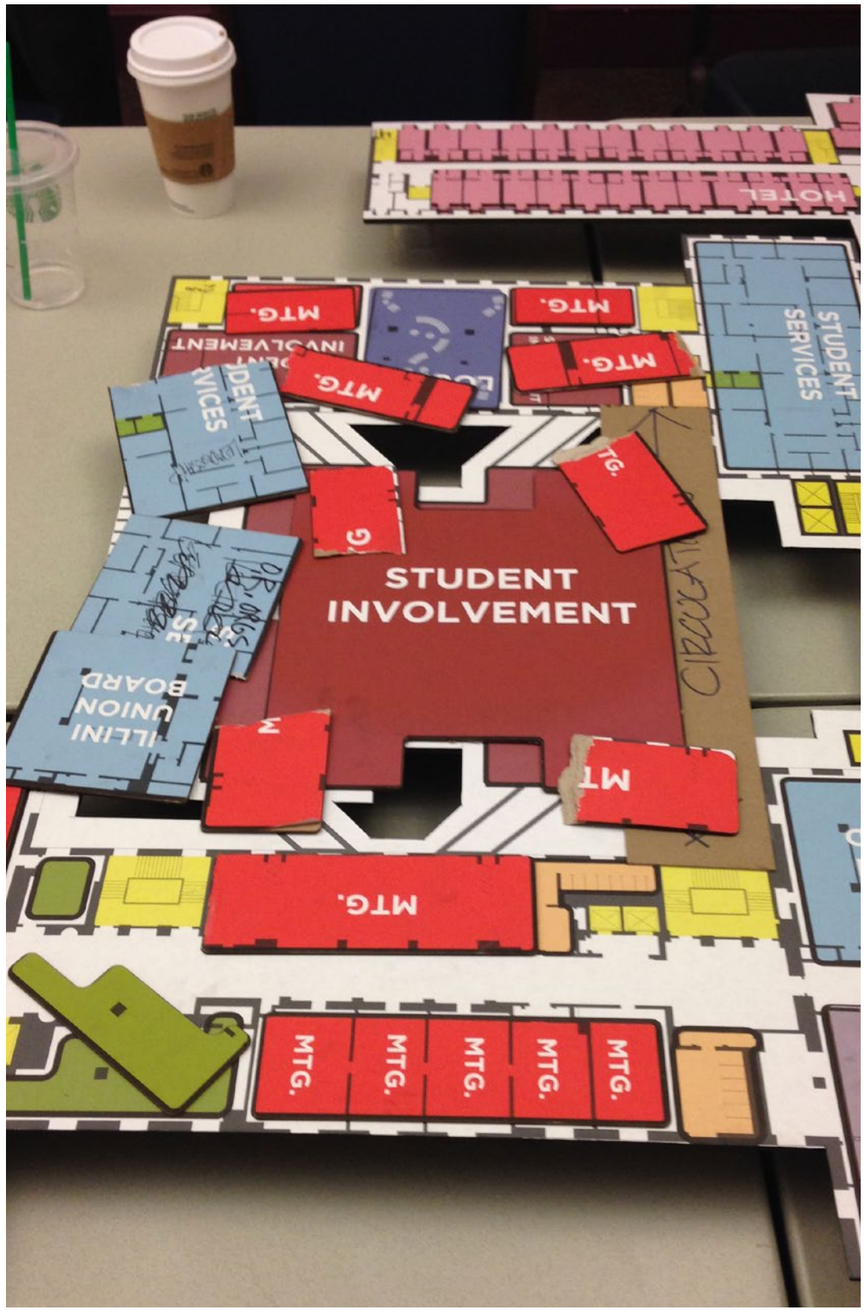
Core Committee Feedback

Overview

As a group, the Core Committee reviewed the two designs which were modelled. Using scaled program pieces, they added, removed, and reconfigured spaces throughout the building in order to improve upon the original designs.

Design Discussion:

- Rooflines of the Illini Rooms need to stay below the adjacent roof peaks
- Consider moving coffee venues to a central location within the building
- Like the close proximity of hotel to Illini Rooms in the “Illini Rooms Up” scheme
- If Illini Rooms were moved to the lower level, there would need to be sound isolation between them and the bowling lanes
- A glass wall at the west entry allows the historical “pavilions” to stand out, which is seen as a positive
- Welcome lounge at the west entry is a nice feature
- It was mentioned that it would be nice to have student-focused space on the 3rd and 4th floors of the south building instead of hotel; however, moving the hotel rooms could be cost prohibitive, and the relatively low floor to ceiling heights make that space less desirable for student-oriented spaces.
- Flexibility of meeting spaces is important
- It would be nice if IUB, Illinois Leadership Center, and Office of RSOs were in close proximity and adjacent to student involvement space
- It would be nice to have 5-10 breakout rooms adjacent to the Illini Rooms
- Would like to leave open the option of on-site catering in case catering operations change
- Liked light well connections between Level 1 and the lower lever
- Consider north campus recreation needs in this facility
- Really like the openness of the Level 1 floor plan in the “Illini Rooms Up” scheme
- Confirming what the Faculty/Staff Vision Team and Student Vision Team had felt, the Core Committee decided to further develop the “Ballroom Up” design scheme



Faculty/Staff Vision Team Feedback

Overview

As a group, the Faculty/Staff Visioning Team reviewed the two designs which were modelled. Using scaled program pieces, they added, removed, and reconfigured spaces throughout the building in order to improve upon the original designs.

Design Discussion:

- Student involvement space should be as reconfigurable as possible. It should have programmable and open capabilities
- Small meeting space can be hard to book, so additional rooms is a plus
- Digital displays could be used to direct users to Level 3 Illini Rooms
- The Illini Rooms are most often used for U of I events
- Colonial Room may be better used as quiet study
- The hotel rooms feel more disconnected from the Illini Rooms on the lower level. This could be a negative
- In either option, it would be nice to have conferencing space for 30-50 that could expand to accommodate 60-80
- Abundant natural light in the “Ballroom Down” design is positive
- In “Ballroom Up” scheme, first floor seems more inviting and energetic. The design could improve campus tours.

Evaluating the Design Concepts

Student Vision Team Feedback

Overview

As a group, the Student Visioning Team reviewed the two designs which were modelled. Using scaled program pieces, they added, removed, and reconfigured spaces throughout the building in order to improve upon the original designs.

Design Discussion:

- Would like one of the lounges to be a “loud” lounge
- Students don’t need a “fancy” restaurant, but they might stay longer if the dining environment was nicer
- Consider making student organization spaces inviting to those that aren’t in student organizations
- If the Illini Rooms were located on the lower level, there would be a lot of fun space within the same area, i.e., bowling, theater, and I-Rooms
- Dining on Level 2 is better than dining on the lower level
- If I-Rooms are on Level 3, be careful that dining venues don’t feel like a food court
- If the Illini Rooms are on Level 3, can the lower level have a theater space with tiered seats and a performance space/dining venue?
- Consider accessibility in both designs
- Make the lounges larger
- Think about enclosing the fountain
- If the Illini Rooms are on Level 3, it creates a nice separation between students and conferencing
- Move the veterans spaces to the student org area for inclusion reasons
- Improved Illini Rooms could generate revenue during the summer
- Illini Rooms are “held for University events, and it is hard for students to access them.”
- Students who visit between classes typically only have 20-25 minutes, but others might stay longer if the Illini Union was nicer
- First floor dining and open floor plan of the “Illini Rooms Up” scheme is exciting and would make students want to spend more time in the Illini Union

Campus Visit #4

Campus Visit #4 | Concept Refinement | November 30 - December 1

Overview:

During Campus Visit #4 the design team met with the Core Committee, Faculty/ Staff Vision Team, and Student Vision Team and shared the results of a six-week “Campus Capital” survey as well as a refined design concept. This concept, based upon the “Ballroom Up” concept, incorporated the perceived strengths of both design concepts that were presented during Campus Visit #3.

Research findings and the new design were presented to each of the three stakeholder groups before the groups spent time studying large scale printed plans and leaving comments on sticky notes. Additional feedback was collected through group discussion of each of the floor plans.

Summary of the Design

- Skylights and floor openings were added to draw natural light into the core of the building
- A “meandering” main floor dining concept was developed to make dining interesting and fun
- Abundant lounge space was developed to allow for socializing, study, and relaxation
- Level 2 destination coffee house was added to draw students to experience adjacent student orgs
- Destination dining venue to create “authentic” Illini dining experience right on the Quad
- 10-12 internal-facing hotel rooms on Level 3 were replaced by meeting space which would support the adjacent Illini Rooms and improve the conferencing and events experience
- Fitness space added on the lower level as an amenity for students and hotel guests

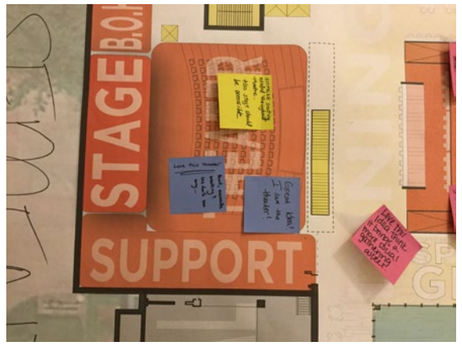
Summary of Feedback

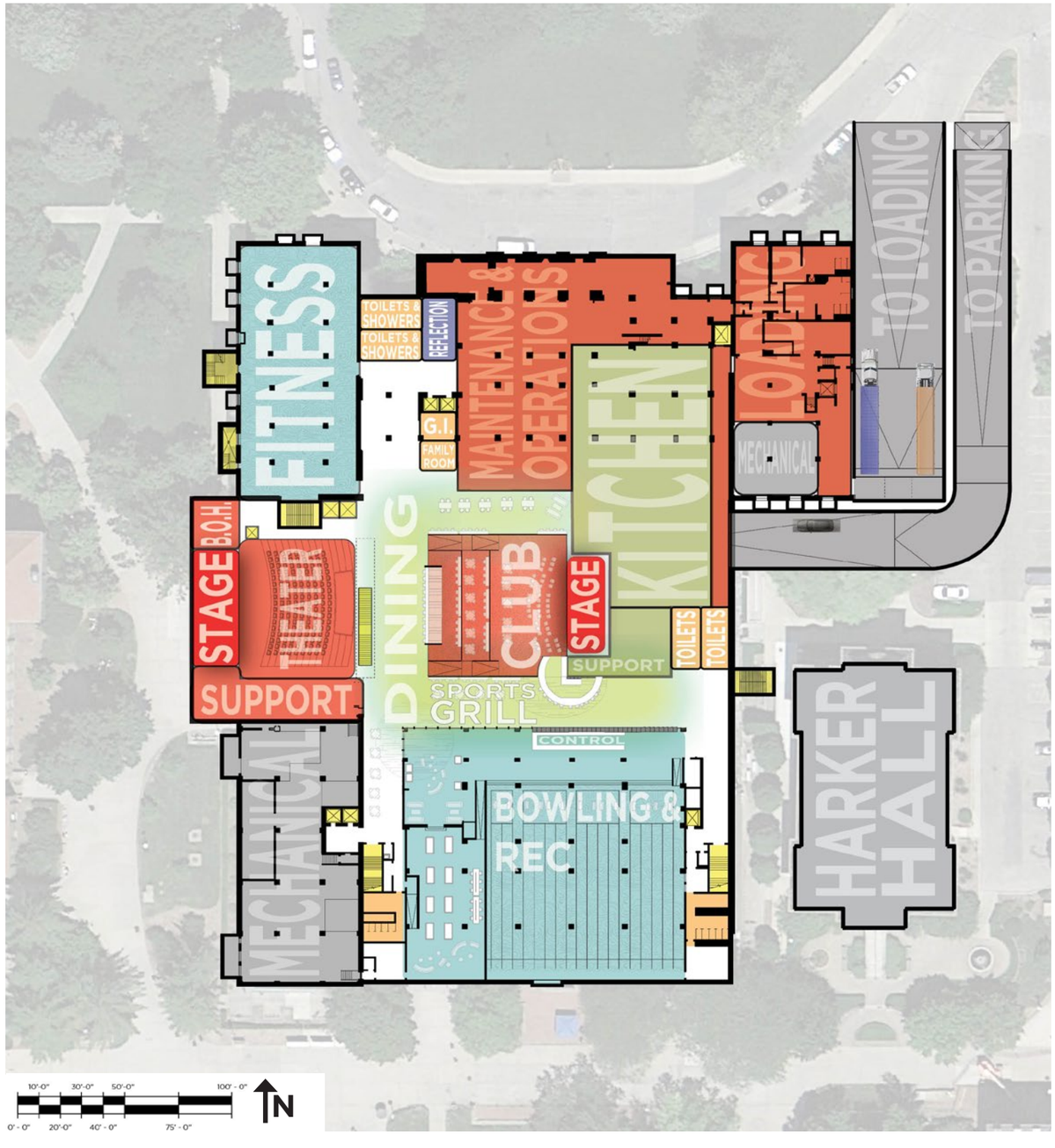
- Love the entertainment and social spaces on the lower level
- Bowling and rec space is good to hang out in.
- Fitness is needed on the north side of campus and for hotel guests.
- The south plaza should be less cluttered and open to large gatherings
- I love the open dining space. Feels great to get it out of the basement
- The west lounge with coffee is awesome!
- Include enough quiet lounge space like the President’s Lounge
- I like the open environment of the student org space.
- Improve quality of hotel rooms
- Love options of reconfigurable Illini Rooms and pre-function space

Refined Concept

Based on “Illini Rooms Up” from Campus Visit #3

Lower Level

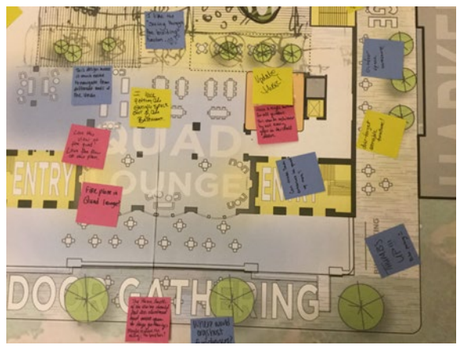


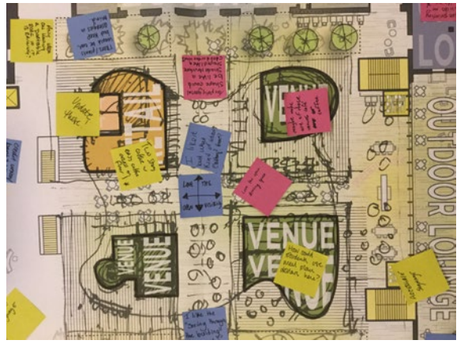


Refined Concept

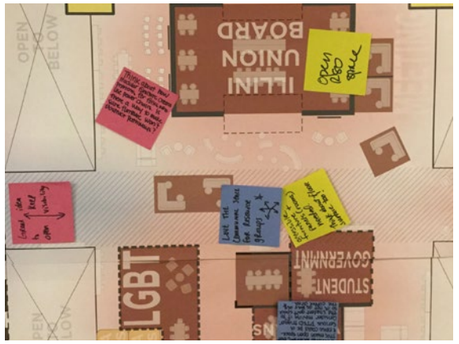
Based on “Illini Rooms Up” from Campus Visit #3

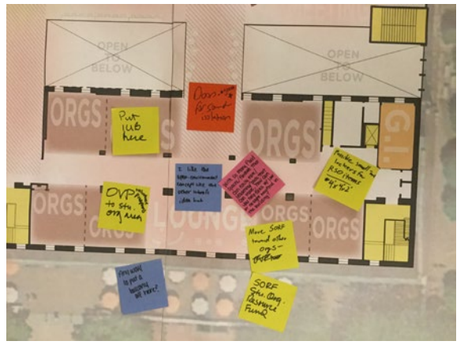
Level 1



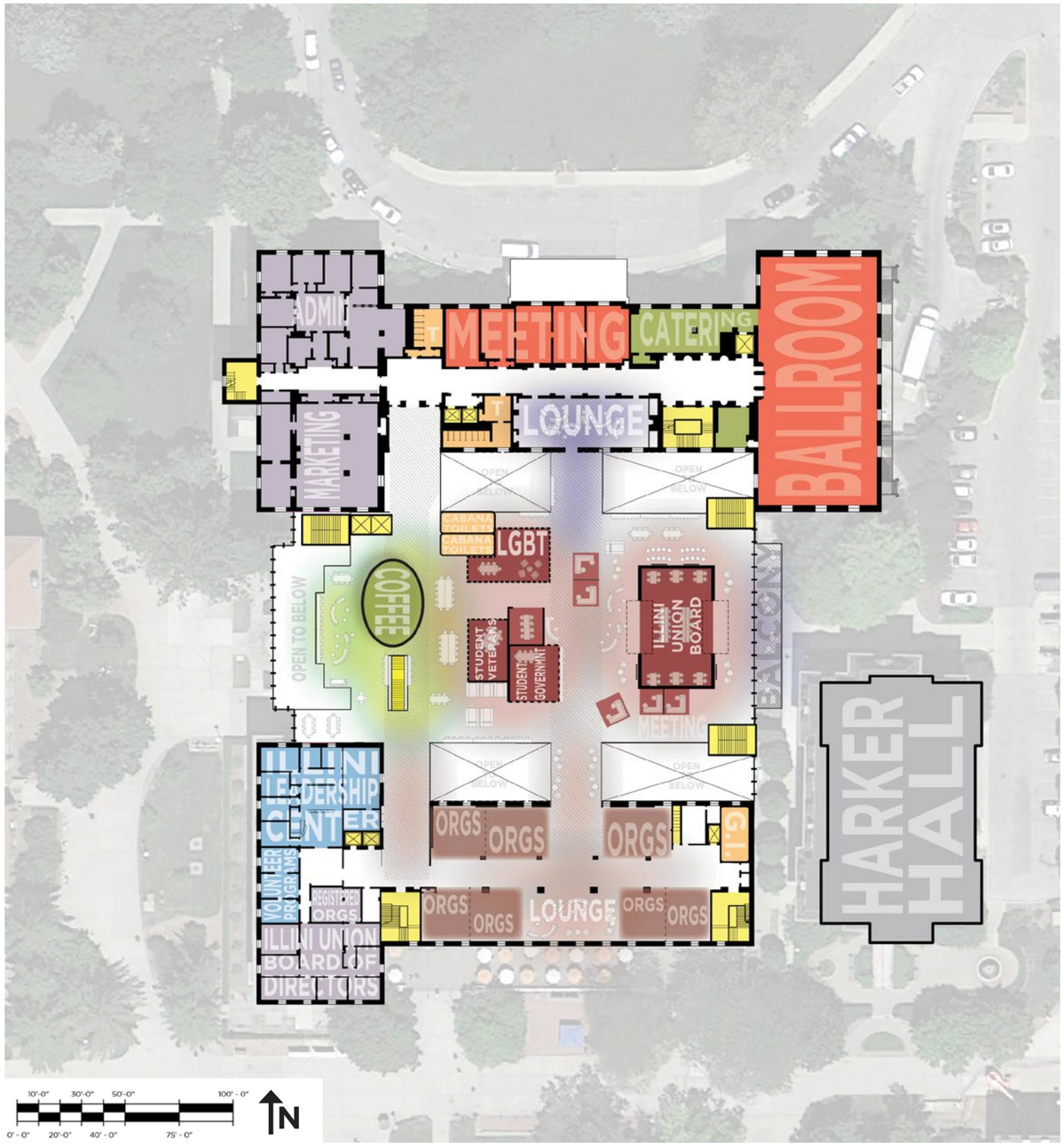


Level 2


ILLINI UNION BOARD
LGBT
STUDENT GOVERNMENT


OPEN TO BELOW
ORGS
LOUNGE

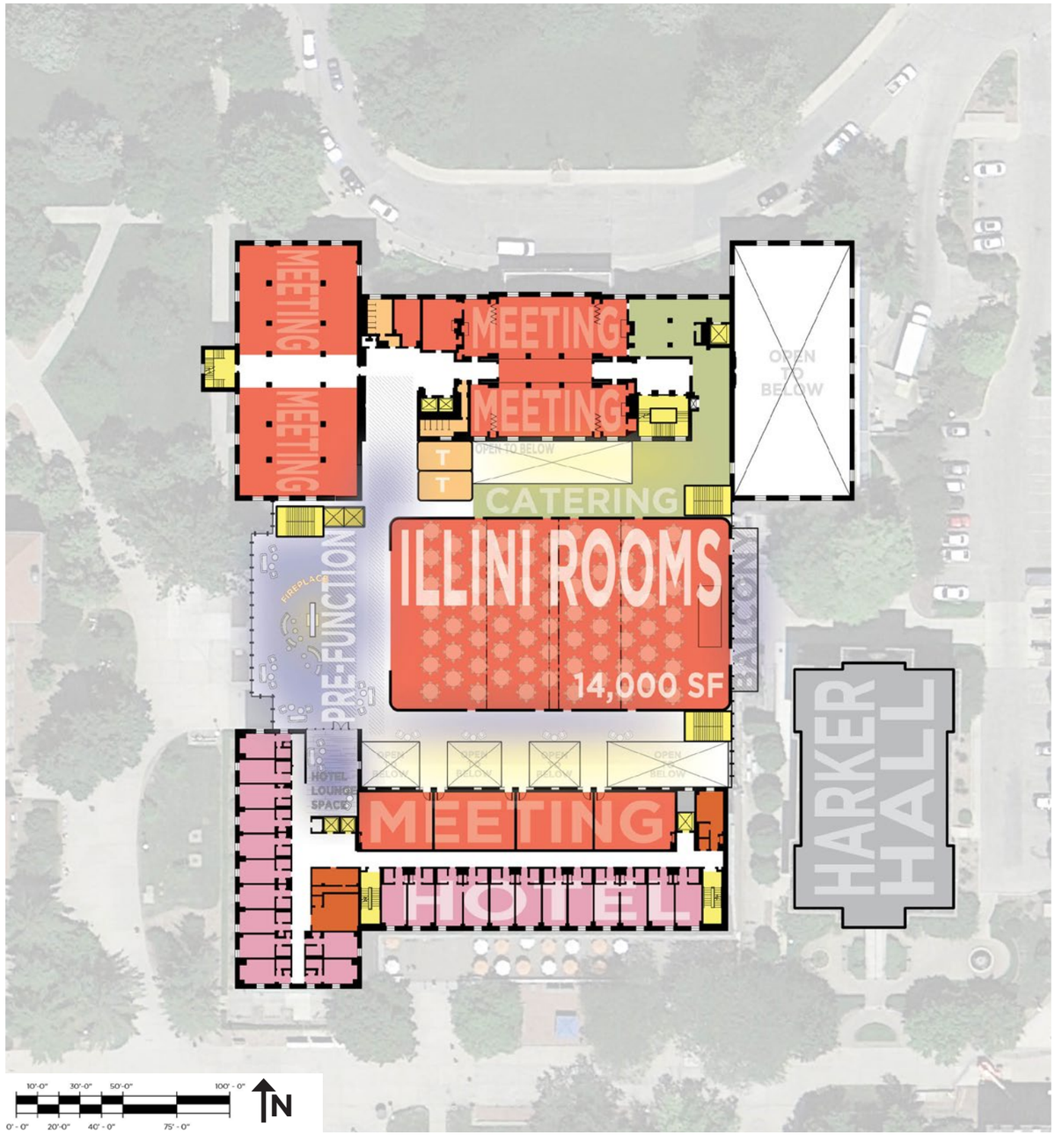

OPEN TO BELOW


ADMIN
MEETING
CATERING
BALLROOM
MARKETING
LOUNGE
CABANA TOILETS
LGBT
COFFEE
OPEN TO BELOW
STUDENT VETERANS
STUDENT GOVERNMENT
ILLINI UNION BOARD
ILLINI LEADERSHIP CENTER
VOLUNTEER PROGRAMS
REGISTERED ORGS
ILLINI UNION BOARD OF DIRECTORS
ORGS
LOUNGE
HARKER HALL
10'-0" 30'-0" 50'-0" 100' - 0"
0' - 0" 20'-0" 40' - 0" 75' - 0"
N

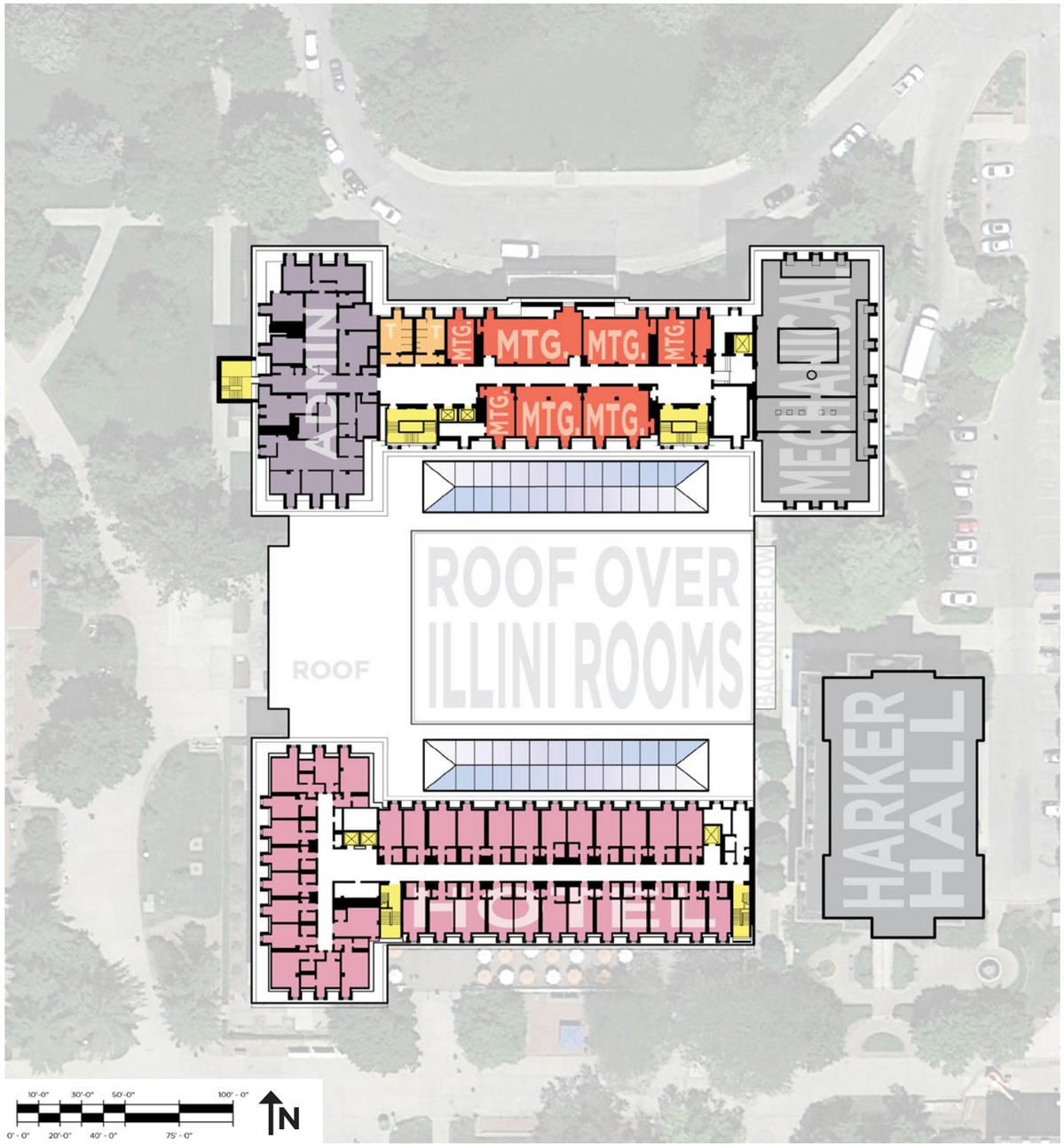
Refined Concept

Based on “Illini Rooms Up” from Campus Visit #3

Level 3



Level 4


MTG.
MTG.
MTG.
MTG.
MTG.
MTG.
ROOF OVER
ILLINI ROOMS
ROOF
HARKER
HALL
10'-0"
30'-0"
50'-0"
100' - 0"
0' - 0"
20'-0"
40' - 0"
75' - 0"
N

Meeting and WebEx | Progress Review | December 21

Overview

On December 21, the design team met with the core committee to review additional renderings and design changes that were made following Campus Visit #4.

Major Changes Since Last Meeting:

- Expansion and relocation of fitness within the lower level. Related improvements in the way of enhanced convenience, environment, and space for amenities.
- Improved access to “Theater” and “Club” from “Loading”.
- Added First Level retail space to accommodate a coffee venue, “Tech Store”, and “Credit Union”.
- Added Second Level meeting space within “Orgs” for student senate chambers.

DINING - SOUTH

Summary of Discussion and Feedback:

- Bike parking should be shown at the SW corner of the building
  - Potential option could be across the east-west pedestrian path but this might be outside of the Union’s scope of work
- Bike parking should be shown at the SE corner of the building
- Bike storage space is another idea to consider
- The committee likes the idea of bike parking close to the entries while the fitness center provides convenient showers and changing areas
- Student Involvement on Level 2:
  - Office of Registered Organizations needs to be labeled on the plans
  - S.O.R.F. needs to be labeled on the plans
  - Illinois Leadership Center can expand into the Volunteer Programs space but Volunteer Programs needs to be relocated
  - Keep the Senate Chambers label on the plan
    - The committee discussed the opportunity for this space to multi-purpose
  - Consider the best way to label all the student spaces
    - Students want to make sure they are included and are gaining space
- Meeting space on Level 3:
  - Consider operable partitions to the south of the Illini Rooms so that the space can expand into the pre-function corridor
  - Consider operable partitions in-between the smaller meeting rooms (formerly hotel rooms) in the south building
- The Diana Statue will need to rotate to face east in the proposed location
- Need to show more images in the north-south direction to highlight the sight lines and openness
  - The design team proposed a series of vignettes to communicate the experience
- Use a key plan and labels to help people understand and orient themselves to the aerial diagrams
- Add a few views that capture how the interior connects to the exterior campus
  - One example would be an image from the Coffee House looking out to Altgeld Hall
- Overall the committee likes the direction of the concept
- The Master Plan Report will show options for the loading dock and the implications on the steam tunnel

Concept Development Analyses

Program Analysis

Program Analysis

Additional Detail and Analysis

Overview

The following program information is the supporting data for the broad scope program summary shown at the beginning of this document and again on this page.

The broad scope program contains ten program categories. The breakdown of each category is shown in the following tables.

Broad Scope Program Summary February 2017

Space Type	Notes	Existing ASF total	Proposed ASF total	Increase/ Decrease
1. Lounge & Dining Seating		24,198	28,707	19%
2. Meeting & Event Spaces		34,543	50,753	47%
3. Recreation		14,994	22,391	49%
4. Student Involvement		9,250	23,766	157%
5. Food Service		13,356	20,000	50%
6. Retail Spaces		7,199	5,720	-21%
7. Administration		14,427	10,348	-28%
8. Hotel		22,766	17,990	-21%
9. Student Services		10,829	6,950	-36%
10. Operations & Maintenance		7,305	15,686	115%
	Assignable Area (ASF)	158,868	202,311	
	Gross Area (GSF)	327,877	416,630	
	Efficiency Factor	48%	49%	

OUTLINE PROGRAM — 1. Lounge & Dining Seating

Floor	Room No.	Space Type	Existing ASF total	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
EXISTING SPACES							
0	25	Lounge	1,050				Adj. to Veterans Lounge
0	65	Dining Seating	6,140				
0	70	Dining Seating	2,945				
1	104	Room 104	2,525				Study Lounge
1	104A	Storage	9				
1	122	North Lounge	1,784	1	1,784	1,784	
1	124	Storage	202	1	202	202	
1	133	Art Gallery	1,868				
1	134	Pine Lounge	2,687	1	2,687	2,687	
1	135	President's Lounge	925	1	925	925	
1	160	South Lounge	2,032	1	2,032	2,032	
2	210	Lounge	2,032	1	2,032	2,032	
PROPOSED SPACES							
0		Reflection Room		1	600	600	
1		Quiet Study Lounge		1	1,868	1,868	Fmr. Art Gallery
1		Colonial Room		1	3,000	3,000	
1		Main Coffee Seating		1	2,800	2,800	
1		Destination Dining Stg.		1	2,500	2,500	
1		New South Lounge		1	2,200	2,200	
1		N. Lightwell Lounge		1	1,175	1,175	
1		Dining Area Seating		1	3,000	3,000	
1		East Lounge		1	1,400	1,400	
2		Upper Coffee Lounge		1	2,000	2,000	
2		West Prefunction		1	3,200	3,200	
2		South Prefunction		1	900	900	
			24,198			28,707	

Program Analysis
Additional Detail and Analysis

	OUTLINE PROGRAM			2. Meeting / Event			
				Master Plan			
Floor	Room No.	Space Type	Existing ASF total	Quantity	ASF each	ASF total	Comments
	EXISTING SPACES						
1	103	Colonial Room	0				See Food Svc., convert to lounge
1	160	South Lounge					Reservable, See Lounge
1	0170A	Illini A	2,796				
1	0170B	Illini B	3,216				
1	0170C	Illini C	3,223				
		Courtyard Café					
1	140	Lounge	2,942				Programming Space
1	0140A	Lounge	1,187				
1	0140B	Lounge / Starbucks	1,182				
1	0140E	Lounge Stage	311				
1	144	Lounge Support	105				
1	146	Lounge Support	108				
1	148	Lounge Support	189				
1	173B	Meeting Room Support	173				
1	176A	Meeting Room Support	108				
1	176B	Meeting Room Support	320				
2	200	Ballroom	6,278	1	6,278	6,278	Two Story
2	209	209	522	1	522	522	
2	210	210	1,407	1	1,407	1,407	
2	211	211	390	1	390	390	
2	215	215	352	1	352	352	
2	217	217	423	1	423	423	
2	0217A	Storage	10	1	10	10	
3	C314	Corridor/Meeting Rm Expansion	488	1	488	488	Expands 314A, 314B
3	0314A	Meeting Room	1,256	1	1,256	1,256	
3	315	Meeting Room	297	1	297	297	Expands 314A
3	0315A	Storage	12	1	12	12	
3	307	Meeting Room	306	1	306	306	Expands 314A
3	0314B	Meeting Room	1,092	1	1,092	1,092	
3	316	Meeting Room	201	1	201	201	Expands 314B
3	308	Meeting Room	267	1	267	267	Expands 314B
3	0308A	Storage	18	1	18	18	
3	0308B	Storage	24	1	24	24	
3	317	317	410	1	410	410	Expands 314A
3	319	319	244	1	244	244	

Meeting / Event Program Continued

				Master Plan			
Floor	Room No.	Space Type	Existing ASF total	Quantity	ASF each	ASF total	Comments
4	402	402	379	1	379	379	
4	403	403	362	1	362	362	
4	404	404	738	1	738	738	
4	0404A	Storage	14	1	14	14	
4	405	405	650	1	650	650	
4	0405A	Storage	21	1	21	21	
4	0405B	Storage	78	1	78	78	
4	406	406	748	1	748	748	
4	407	407	982	1	982	982	
4	0407A	Storage	15	1	15	15	
4	0407B	Storage	82	1	82	82	
4	408	408	325	1	325	325	
4	0408A	Storage	13	1	13	13	
4	409	409	278	1	278	278	
	PROPOSED SPACES						
0		**Student Programming**		1	4,750	4,750	
0		**Theater**		1	5,500	5,500	
3		New Meeting Room		1	800	800	
3		New Meeting Room		1	1,250	1,250	
3		New Meeting Room		1	550	550	
3		New Meeting Room		1	550	550	
		Expanded Illini Rooms					
3		Room A		1	4,660	4,660	
3		Room B		1	4,660	4,660	
3		Room C		1	4,660	4,660	
		Table & Chair Storage		1	1,000	1,000	
3		New Meeting Room		1	956	956	Previous Hotel Rooms
3		New Meeting Room		1	967	967	Previous Hotel Rooms
3		New Meeting Room		1	884	884	Previous Hotel Rooms
3		New Meeting Room		1	884	884	Previous Hotel Rooms
			34,543			**50,753**	

OUTLINE PROGRAM — 3. Recreation

Floor	Room No.	Space Type	Existing ASF each	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
EXISTING SPACES							
		Rec Room					
0	60	Bowling	11,664	1	11,664	11,664	reduce lanes from14 to 12
0	60B	Billiards	2,517	1	2,517	2,517	move control desk
0	60C	Bowling Office	104	1	104	104	
0	60E	Recreation Service	326	1	326	326	
0	60W	Storage Room	280	1	280	280	
1	173A	Recreation Support	103				
PROPOSED SPACES							
0		**Fitness Center**		1	7,500	7,500	
			14,994			**22,391**	

OUTLINE PROGRAM — 4. Student Involvement

Floor	Room No.	Space Type	Existing ASF each	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
EXISTING SPACES							
		Student Government Complex					
2	250	Senate Community Center	340				
2	251	Storage	25				
2	0251A	Storage	18				
2	252	Conference Room	197				
2	0252A	Support	52				
2	255	Office	180				
2	257	Office	146				
2	0257A	Office	150				
2	0257B	Office Service - Storage Room	7				
2	253	Lounge	374				Open to circulation
		Student Organization Complex					
2	254	Student Org. Office	126				
2	256	Student Org. Office	123				
2	258	Student Org. Office	125				
2	260	Student Org. Office	124				
2	262	Student Org. Office	123				
2	264	Student Org. Office	124				
2	266	Student Org. Office	124				
2	268	Student Org. Office	128				
2	270	Student Org. Office	134				
2	272	Office Service - Mail Room	48				
2	277	Conference Room	309				
2	280	Open Office	4,012				Open to circulation
		Student Support Suite					Suite Includes:
2	284	Registered Orgs.	371				Registered Organizations
2	285	Open Office/Reception	505				S.O.R.F.
2	0285A	Office Service - Work Room	174				ReSOurce Center
2	0285B	Office Service - Storage Room	50				Student Sustainability Cmte.
2	0285C	Office	146				
2	0285D	Office	152				
2	0285E	Office	145				
2	0285F	Office	263				
2	0285G	Office	169				
2	0285H	Office	285				
PROPOSED SPACES							
0		**Multi-Purpose Activity Space**		1	4,250	4,250	Flexible Studio Space
2		**Expanded Student Support Suite** Registered Organizations S.O.R.F. ReSOurce Center Student Sustainability Cmte.		1	2,716	2,716	
2		**Senate Chambers**		1	2,700	2,700	
2		**Collaborative Student Orgs.**					
		Open Collaborative Space		1	10,000	10,000	
		Internal Circulation (20%)		1	2,000	2,000	
		Graphics Space		1	250	250	
		Huddle Rooms		3	250	750	
2		**Quad Lounge**		1	1,100	1,100	
			9,250			**23,766**	

Program Analysis
Additional Detail and Analysis

OUTLINE PROGRAM — 5. Food Service

Floor	Room No.	Space Type	Existing ASF each	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
	EXISTING SPACES						
0		Previous Bakery & Cold Prep Area	-2,605				Underutilized
0		Previous Hot Production Kitcher	-1,589				Underutilized
0		Previous Dish Room	-1,104				Underutilized
0		HFS Catering & Storage in Basement	958				
0		Unlabeled Coolers & Storage in Basement	-491				Underutilized
0	70L	Einstein Bros. Bagels	1,024				
0	26	Qdoba	775				
0	70A	KoFusion	898				
0	70C	Sbarro's	643				
0	70E	Wendy's	944				
1	171	Specialty Shop (Auntie Anne's)	324				
1	189	Specialty Shop (Jamba Juice)	1,123				
1	140B	Specialty Shop (Starbuck's))	662				
1	188	Quad Shop / Convenience Store	1,901				
1	115B	Office	166	1	166	166	
1	115B1	Office	145	1	145	145	
1	115B2	Office Service - Storage Room	55	1	55	55	
1	115A	Office	106	1	106	106	
1	115A1	Office	104	1	104	104	
		Shared Support (Lockers, Employee Restrooms, Ice Machines, Waste	1,397				
1	168	Level 1 Catering Pantry & Support for Illini Rooms	1,941				
1		Existing Illini Rooms Table & Chair Storage	0				
		Colonial Room					
1	103	Dining Space	1,832				Convert to Lounge space
1	103A	Buffet & Storage	1,203				
2	203, 202	Ballroom Catering Pantry & Support	1,302				Assume Outside Catererer
3	305	Catering Pantry & Equiptment Storage	975				Reconfigured for new Illini Rooms
3	305A	Table & Chair Storage	668				
	PROPOSED SPACES						
0		**Shell Space for Future Catering Kitchen**		1	4,225	4,225	
0		**Lower Level Grille Pub**		1	1,070	1,070	
1		**Destination Dining Restaurant**		1	2,250	2,250	
		See 1. Lounge for associated dining seating					
1		**Quick Service Restaurant #1**		1	1,505	1,505	
		See 1. Lounge for associated dining seating					
1		**Quick Service Restaurant #2**		1	1,260	1,260	
		See 1. Lounge for associated dining seating					
1		**Quick Service Restaurant #3**		1	1,550	1,550	
		See 1. Lounge for associated dining seating					
1		**Specialty Shop (Auntie Anne's)**		1	680	680	
		See 1. Lounge for associated dining seating					
1		**Specialty Shop (Jamba Juice)**		1	885	885	
		See 1. Lounge for associated dining seating					
		Coffee Shop (Starbucks)		1	1,020	1,020	
		See 1. Lounge for associated dining seating					
		Existing Ballroom Support					
2		Catering Pantry, Equipment, Storage & Support		1	960	960	Assume Outside Caterer
0		Production & Storage in Kitchen for Existing Ballroom		0	0	0	
2		Table & Chair Storage - Existing Ballroom		1	335	335	
		New Larger Illini Room Support					
3		Lrg Illini Room Catering Pantry, Equiptmen		1	1,730	1,730	Assume Outside Caterer
0		Lrg Illni Room Production & Storage		0	0	0	
3		Lrg Illini Room Table & Chair Storage		1	1,000	1,000	
0		**Shared Support (Lockers, Employee Restrooms, Etc.)**		1	1,530	1,530	Refer to Dining Analysis
			13,356			**20,000**	

OUTLINE PROGRAM — 6. Retail

Floor	Room No.	Space Type	Existing ASF each	Master Plan Large Quantity	Master Plan Large ASF each	Master Plan Large ASF total	Comments
	EXISTING SPACES						
0	25E	Retail Storage	249				
		Credit Union					
1	165	Credit Union	586				
1	165B	Office	94				
1	165C	Office	93				
1	165E	Office	88				
1	162	Retail Support	304				
1	172	Storage	338				Misc. Stor.
1	172A	Storage Room	126				Misc. Stor.
1	172B	Storage Room	84				Misc. Stor.
1	173C	Office Support	49				Misc. Stor.
1	174	Merchandising Service	163				Misc. Stor.
1	173C	Office	49				
1	177	Retail Support	175				
1	177A	Retail Support	175				
1	188	**Tech Store (Rms A,B and C)**	2,500				
		Quad Shop					
1	188	Quad Shop	1,544				
1	188A	Storage	28				
1	188A1	Support	182				
1	188B	Support	283				
1	188B1	Office	89				
	PROPOSED SPACES						
1		Credit Union		1	1,240	1,240	
1		Quad Shop / Convenience		1	1,950	1,950	
1		Tech Store		1	2,530	2,530	
			7,199			**5,720**	

OUTLINE PROGRAM — 7. Administration

Floor	Room No.	Space Type	Existing ASF each	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
	EXISTING SPACES						
		Event Services					
1	125A1	Office	56	1	56	56	
1	125A2	Work Room	135	1	135	135	
1	129	Work Room	62	1	62	62	
1	129C	Work Room	67	1	67	67	
1	129A	Office	204	1	204	204	
1	129B	Work Room	70	1	70	70	
1	129A1	Exhibition	17	1	17	17	
1	129E	Office	156	1	156	156	
		Mezzanine					
1M	M104B	Storage Room	216				
1M	M115H	Storage Room	70				
1M	M115J	Server Rooms	384				
1M	M115K	Storage	70				
1M	M125C	Office	329				
1M	M125D	Office	341				
1M	M125F	Office	190				
1M	M125G	Storage	227				
1M	M170	Office	289				
1M	M170A	Storage	5				
1M	M171	Office	209				
1M	M171A	Storage	6				
1M	M172	Office	150				
1M	M173	Office	118				
1M	M173A	Storage	5				
1M	M174	Office	169				
1M	M174A	Storage	35				
1M	M175	Office	360				
1M	M176	Office	167				
1M	M177	Office	152				
1M	M178	Office	342				
1M	M178A	Office	168				
1M	M178A1	Support	35				
1M	M179	Support	56				
1M	M180	Support	28				
1M	M182	Support	22				
		Administration Suite/HRAs					
2	220A,B,	Storage Room	84	1	84	84	
2	221	Office	653	1	653	653	
2	221A	Office	113	1	113	113	
2	226	Office	127	1	127	127	
2	229	Office	206	1	206	206	
2	227	Office	394	1	394	394	
2	225B	Office	209	1	209	209	
2	230	Corridor	22	1	22	22	
2	230A	Office	186	1	186	186	
2	230B	Office	239	1	239	239	
2	231	Office	218	1	218	218	
2	232	Office	107	1	107	107	
2	232A	Office	180	1	180	180	

Administration Program Continued

Floor	Room No.	Space Type	Existing ASF each	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
		Illini Union Board					
2	222	Office	1,811				
2	222A	Storage	22				
2	222B	Storage	23				
2	222C	Office	284				
2	222D	Office	188				
2	222E	Office	132				
2	222F	Storage	73				
		Accounting Offices					
4	420A	Vestibule	568	1	568	568	
4	420B	Office	196	1	196	196	
4	420C	Office	208	1	208	208	
4	420D	Office	165	1	165	165	
4	420E	Office	258	1	258	258	
4	420G	Copy Room	181	1	181	181	
4	420H	Conference Room	275	1	275	275	
4	420AA	Storage	57	1	57	57	
4	420CA	Storage	107	1	107	107	
		Computer/Data Centers					
4	420L	Storage	153	1	153	153	
4	420M	Storage	101	1	101	101	
4	420MA	Office	44	1	44	44	
		Marketing Offices					
4	420FA	Office	98	1	98	98	
4	420N	Storage	90	1	90	90	
4	420P	Work Room	653	1	653	653	
4	420Q	Office	169	1	169	169	
4	420R	Office	171	1	171	171	
4	420S	Office	170	1	170	170	
4	420T	Storage	23	1	23	23	
4	420U	Office	303	1	303	303	
3	335D	Marketing Office	254	1	254	254	
	PROPOSED SPACES						
2		**Illini Union Board**		1	2,600	2,600	Reconfigured Suite
			14,427			**10,348**	

Program Analysis
Additional Detail and Analysis

	OUTLINE PROGRAM						8. Hotel
			Existing	Master Plan			
Floor	Room No.	Space Type	ASF each	Quantity	ASF each	ASF total	Comments
	EXISTING SPACES						
1	125	Hotel Front Desk	116	1	116	116	
1	125A	Hotel Office	132	1	132	132	
3	357A	Hotel Support	343	1	343	343	
3	357B	Hotel Support	172	1	172	172	
3	358	Hotel Support	330	1	330	330	Barrier Free
3	361	Hotel Room	320	1	320	320	
3	362	Hotel Room	317				
3	363	Hotel Room	310	1	310	310	
3	364	Hotel Room	347				
3	365/367	Hotel Room	618	1	618	618	Suite
3	366	Hotel Room	302				
3	368	Hotel Room	306				
3	369	Hotel Room	300	1	300	300	
3	370	Hotel Room	287				
3	371	Hotel Room	295	1	295	295	
3	372	Hotel Room	292				
3	373	Hotel Room	306	1	306	306	
3	374	Hotel Room	294				
3	375	Hotel Room	295	1	295	295	
3	376	Hotel Room	313				
3	377/379	Hotel Room	626	1	626	626	Suite
3	378	Hotel Room	315				
3	380	Hotel Room	307				
3	381	Hotel Room	315	1	315	315	
3	382	Hotel Room	301				
3	383	Hotel Room	304	1	304	304	
3	384	Hotel Room	301				
3	386	Hotel Room	269	1	269	269	
3	387	Hotel Room	267	1	267	267	
3	388	Hotel Room	264	1	264	264	
3	389	Hotel Room	250	1	250	250	
3	390	Hotel Room	252	1	252	252	
3	391	Hotel Room	258	1	258	258	
3	392	Hotel Room	262	1	262	262	
3	393	Hotel Room	257	1	257	257	
3	394	Hotel Room	250	1	250	250	Barrier Free
3	395	Hotel Room	257	1	257	257	Barrier Free
3	396	Hotel Room	258	1	258	258	
3	397	Hotel Room	269	1	269	269	
3	398	Hotel Room	270				
3	399	Hotel Room	266				
3	399C	Merchandising	41				
4	457A, B	Hotel Suport	516	1	516	516	
4	457C	Hotel Support	21	1	21	21	
4	457D	Hotel Suport	36	1	36	36	
4	457E	Hotel Suport	25	1	25	25	

Hotel Program Continued

			Existing	Master Plan			
Floor	Room No.	Space Type	ASF each	Quantity	ASF each	ASF total	Comments
4	458	Hotel Room	248	1	248	248	
4	461	Hotel Room	247	1	247	247	
4	462	Hotel Room	275	1	275	275	
4	463	Hotel Room	264	1	264	264	
4	464	Hotel Room	315	1	315	315	
4	465	Hotel Room	309	1	309	309	
4	466	Hotel Room	285	1	285	285	
4	467	Hotel Room	272	1	272	272	
4	468	Hotel Room	280	1	280	280	
4	469	Hotel Room	267	1	267	267	
4	470	Hotel Room	276	1	276	276	
4	471	Hotel Room	265	1	265	265	
4	472	Hotel Room	273	1	273	273	
4	473	Hotel Room	263	1	263	263	
4	474	Hotel Room	284	1	284	284	
4	475	Hotel Room	271	1	271	271	
4	476	Hotel Room	276	1	276	276	
4	477	Hotel Room	274	1	274	274	
4	478	Hotel Room	302	1	302	302	
4	479	Hotel Room	312	1	312	312	
4	480	Hotel Room	302	1	302	302	
4	481	Hotel Room	270	1	270	270	
4	482	Hotel Room	256	1	256	256	
4	483	Hotel Room	258	1	258	258	
4	484	Hotel Room	270				Removed for 4th Floor Bridge
4	485	Hotel Room	317	1	317	317	
4	486	Hotel Room	226	1	226	226	
4	487	Hotel Room	319	1	319	319	
4	488	Hotel Room	242	1	242	242	
4	489	Hotel Room	230	1	230	230	
4	490	Hotel Room	234	1	234	234	
4	491	Hotel Room	233	1	233	233	
4	492	Hotel Room	242	1	242	242	
4	493	Hotel Room	216	1	216	216	
4	494	Hotel Room	306	1	306	306	
4	495	Hotel Room	215	1	215	215	
4	496	Hotel Room	321	1	321	321	
			22,766			**17,990**	

OUTLINE PROGRAM

9. Student Services

Floor	Room No.	Space Type	Existing ASF each	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
	EXISTING SPACES						
0	51	**Mckinley Health - Merchandising**	194				
0	25C	**Student Veterans**	513				
		CLASS Computer Lab/Study Space					
0	40	Study Room - Computer Laboratory	2,230				Integrate into Lounge Space
0	41	Study Room - Computer Laboratory	305				
0	42	Study Room - Computer Laboratory	348				
0	43	Study Service - Storage Room	142				
0	45	Merchandising - Serving Area	121				
0	45A	Merchandising Service	135				
0	46	Study Room - Computer Laboratory	412				
0	47	Lounge	511				
0	48	Meeting Room	594				
0	48A	Meeting Room Storage	89				
0	48B	Meeting Room Storage	32				
0	49	Study Room - Computer Laboratory	141				
0	50	Study Room - Computer Laboratory	135				
		Illinois Leadership Center					
2	0290A	Office	55				
2	290	Office Service - Reception Area	556				
2	291	Office	152				
2	292	Office	140				
2	293	Office	147				
2	294	Office	196				
2	295	Office	92				
2	296	Office	91				
2	297	Office	92				
2	298	Office	466				
2	C290A,	Corridors	90				
		Office of Volunteer Programs					
2	286	Office	193				
2	287	Office	200				
2	288	Office	201				
		LGBT Resource Center					
3	322	LGBT - Room	123				
3	323	LGBT - Conference Room	245				
3	0323A	LGBT - Office	135				
3	0323A1	LGBT - Office Service - Storage Room	30				
3	0323A2	LGBT - Office Service - Closet	9				
3	0323B	LGBT - Office	416				
3	0323C	LGBT - Office	121				
		Student Legal Services					
3	324	Office	217				
3	0324A	Office	172				
3	0324B	Office	102				
3	0324C	Office	112				
3	0324D	Office	106				
		Tennant Union Offices					
3	325	Office	152				
3	326	Office	130				
3	0326A	Office	186				

Student Services Continued

Floor	Room No.	Space Type	Existing ASF each	Master Plan Quantity	Master Plan ASF each	Master Plan ASF total	Comments
	PROPOSED SPACES						
0		**Mckinley Health - Merchandising**		1	200	200	Adj. to Fitness Area
2		**Student Veterans**		1	600	600	Adj. to Student Orgs.
2		**Illini Leadership Center**		1	2,570	2,570	Reconfigure/Expand
2		**Volunteer Programs**		1	700	700	Adj. to Student Orgs.
2		**LGBT Resource Center**		1	1,080	1,080	Adj. to Student Orgs.
3		**Student Legal Services**		1	900	900	Reconfigure/Expand
3		**Tennant Union Offices**		1	900	900	Reconfigure/Expand
			10,829			**6,950**	

Program Analysis
Additional Detail and Analysis

	OUTLINE PROGRAM				10. Operation and Maintenance		
			Existing	Master Plan			
Floor	Room No.	Space Type	ASF each	Quantity	ASF each	ASF total	Comments
	EXISTING SPACES						
0	4	Unit Storage	165				
0	25B	Unit Storage	455				
2	213	Storage	445	1	445	445	Meeting Room Area
		Maintenance Offices					
3	328	Office	276				
3	328A	Office	174				
3	328C	Office	219				
3	329	Office	170				
3	330	Office	219				
3	333	Storage	574				
3	335B	Office	99				
3	335C	Storage	194				
4	401	Building Storage	146	1	146	146	Meeting Room Area
4	416A	Storage	16	1	16	16	Meeting Room Area
4	418C	Storage	637	1	637	637	
4	418D	Storage	733	1	733	733	
4	418E	Storage	472	1	472	472	
4	418F	Storage	400	1	400	400	
4	418G	Storage	500	1	500	500	
4	420W	Storage	10	1	10	10	
5	500F	Unit Storage	440	1	440	440	
5	500A	Unit Storage	302	1	302	302	
5	500C	Storage	360	1	360	360	
5	500D	Storage	352	1	352	352	
5	500B	Storage	290	1	290	290	
5	500J	Storage	77	1	77	77	
5	500K	Storage	100	1	100	100	
5	500E	Storage	102	1	102	102	
	PROPOSED SPACES						
0		Loading Dock		1	2,600	2,600	
0		Maintenance Offices		1	2,000	2,000	
0		Building Storage		1	5,706	5,706	
			7,305			**15,686**	

Campus Capital Survey

Campus Capital Survey

Additional Detail and Analysis

Overview

A “campus capital” survey was used to better understand how the physical places on the UIUC campus contribute to student experience. College campuses offer resources and experiences that facilitate four primary functions:

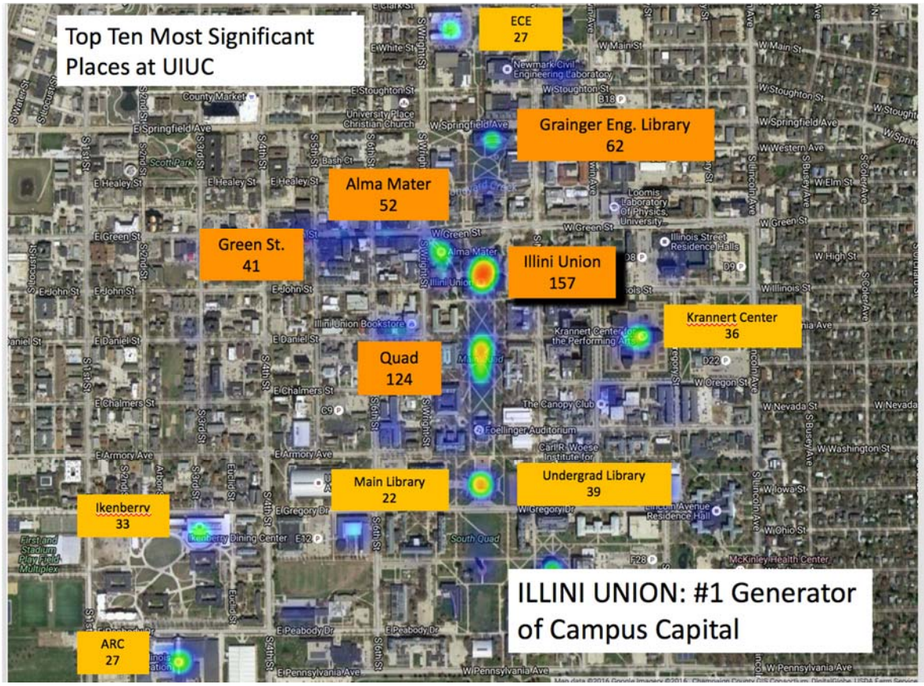
- Knowledge creation and transfer
- Strengthening and creation of social ties
- Campus pride and identity
- Fun and relaxation

In other words, a university campus and its environs can be thought of as a blend of resources that generate four types of campus capital:

- Intellectual: Places where people study, collaborate, create and think new thoughts.
- Social: Places where people meet with friends and encounter people from outside their typical circle
- Symbolic: Places that people like to show visitors, have their pictures taken to post on social media, and exemplify what it means to be a Wolverine.
- Restorative: Places, especially natural settings, where people like to go to relax, de-stress, and restore their attention.

Understanding the UIUC campus as whole provides a valuable context for assessing the current and future role that the Illini Union should play on campus. Thus, the campus capital inventory was intended to shed light on: (a) how and why the building is meaningful to the campus community, and (b) how to leverage its strengths in order to increase its capacity for generating social, intellectual, and/or restorative capital.

An online “campus capital” participatory mapping survey that was administered during the fall of 2016. The survey asked participants to identify significant places on and around campus. A total of 668 survey participants identified 1,592 places. The Illini Union was identified more often across all categories than any other place on campus. The Illini Union received 157 mentions, which represents 10% of all places cited.



Most Significant Places at UIUC	Mentions
Illini Union	157
Quad	124
Grainger Engineering Library	62
Alma Mater	52
Green Street	41
Undergraduate Library	39
Krannert Center for Performing Arts	36
Ikenberry Commons	33
ARC (Activities and Recreation Center)	27
ECE Building	27

Comments from survey participants attest to their strong feelings and affection for the Illini Union:

“It’s a great place to hang out and it is conveniently located in the center of campus.”

“I always enjoy walking through the Union during my routine, as you get to witness new things everyday.”

“To me the union is the place to go when I want to feel most at college. It’s the perfect amount of hustle and bustle for me.”

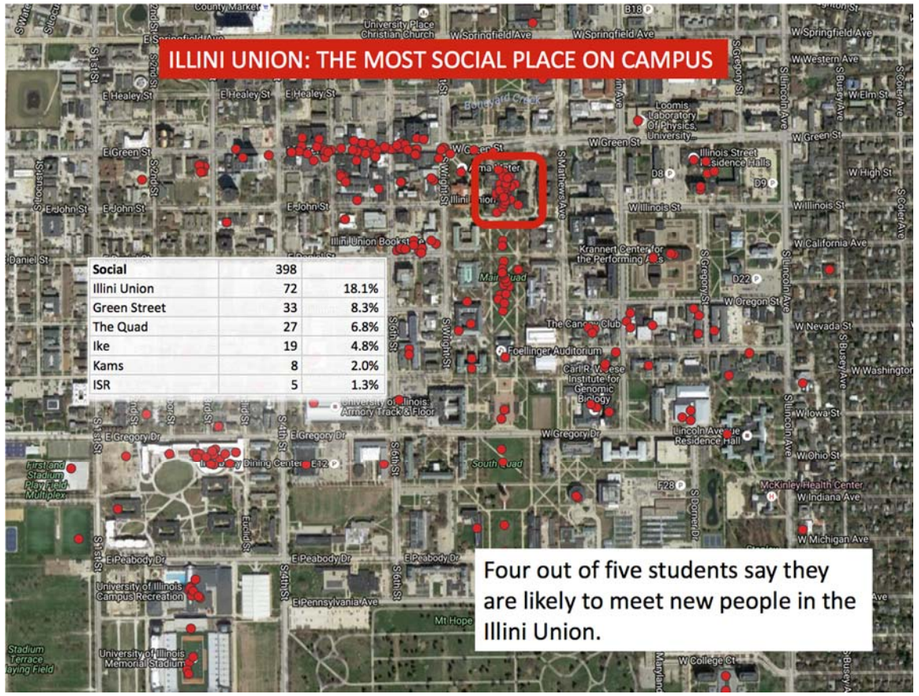
As a primary destination for campus tours and orientation site for international students, the Illini Union also has an early imprinting effect on many students and serves as the starting point for them as they branch out and explore the UIUC campus.

“It’s the first building you really begin to know as soon as you first step on campus.”

“My first year on campus, my main place of study was the union. “

Social

The Illini Union is the most social place UIUC. Survey participants designated



398 different places as “social.” The Illini Union was identified as a social place 72 times, which represents just over 18% of this category.

Social Places	**398**
Illini Union	72
Green Street	33
Quad	27
Ikenberry Commons	19
Kam’s	8
Illinois Street Residence Halls	5

“I have met many friends here.”

“The Union, to me, is a place where people can meet, work and enjoy time together - the key word in this is ‘together.’”

“The union is a gathering place. Somewhere to get food, or hang out with friends, or relax in an environment that isn’t purely academic, but also isn’t completely devoid of thinking.”

“It’s a great place to hang out and it is conveniently located in the center of campus.”

Students also say that the Ilini Union is good place to meet new people. Four out of five students (80%) indicate that it is a place where they are likely to meet people outside their typical circle of friends.

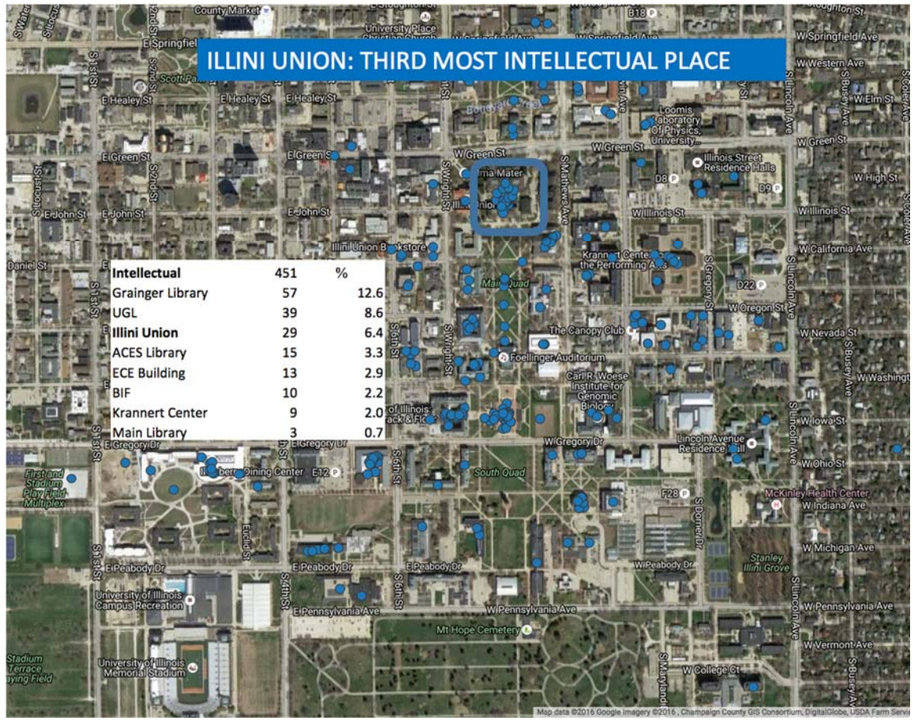
“The location is a nice spot to meet new people. It is public and safe.”

Intellectual

The Ilini Union is among the most important intellectual places for students. It ranked third among all study spaces identified in the survey (29 mentions out of 459 places), behind Grainger Engineering Library and the Undergraduate Library.

Campus Capital Survey

Additional Detail and Analysis



Intellectual Places	**451**
Grainger Library	57
Undergraduate Library	39
Illini Union	29
ACES Library	15
ECE Building	13
Business Instructional Facility	10
Krannert Center	9
Main Library	3

“This has been a good location to meet for group projects or other academic reasons.”

“I only use it as a meeting place for group projects or to study between classes.”

“I love to study inside on a nice day and have a view of the quad.”

“I enjoy studying in the food court. There are many power outlets, food, and sometimes entertainment.”

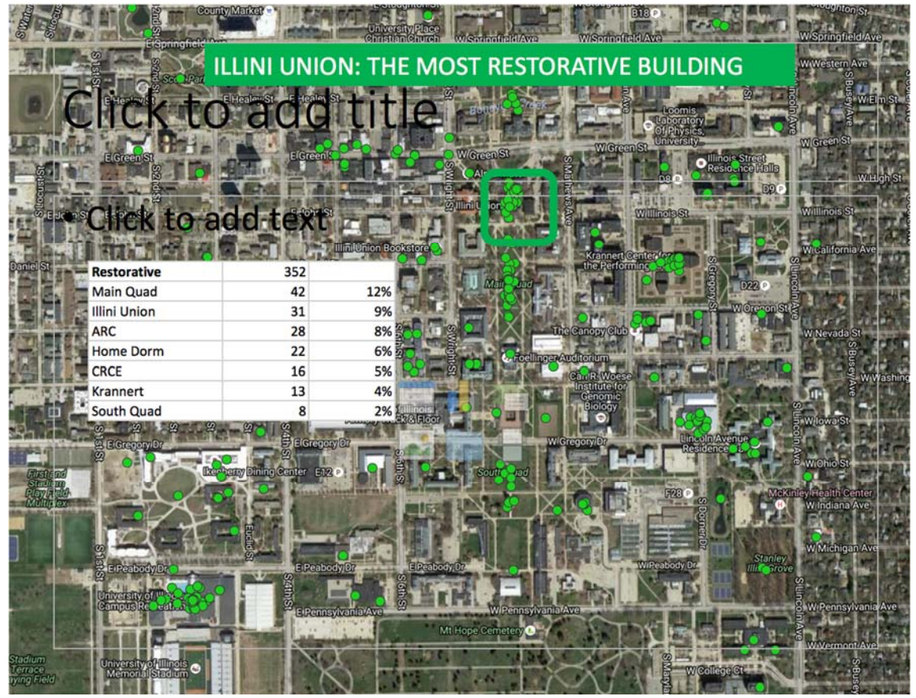
“It is where I perform twice every month with improv, and where I go to study when I need absolute silence in the President’s Lounge.”

Five out of six students (85%) who identified the Illini Union as an important intellectual place also said that they at least occasionally collaborate with the same group of people on a continuing or routine basis. Over half (55%) said they collaborate with the same group of people often or very often.

“You can meet with others for lunch and interact at the same time. It’s great for group meetings and the study room is also very useful.”

Restorative

The Ilini Union is the second most restorative place at UIUC and the most restorative building. Of the 352 responses that identified restorative settings, the



Illini Union was cited 31 times, which represents about 9% of the total. Only the Main Quad, which was cited 42 times, exceeded it.

Restorative Places	**352**
Main Quad	42
Illini Union	31
ARC	28
Home or Res Hall	22
CRCE	16
Krannert Center	13
South Quad	8

"The Illini Union is where people go to wind down, enjoy their time here, without the constant reminder of all the stuff they have to do."

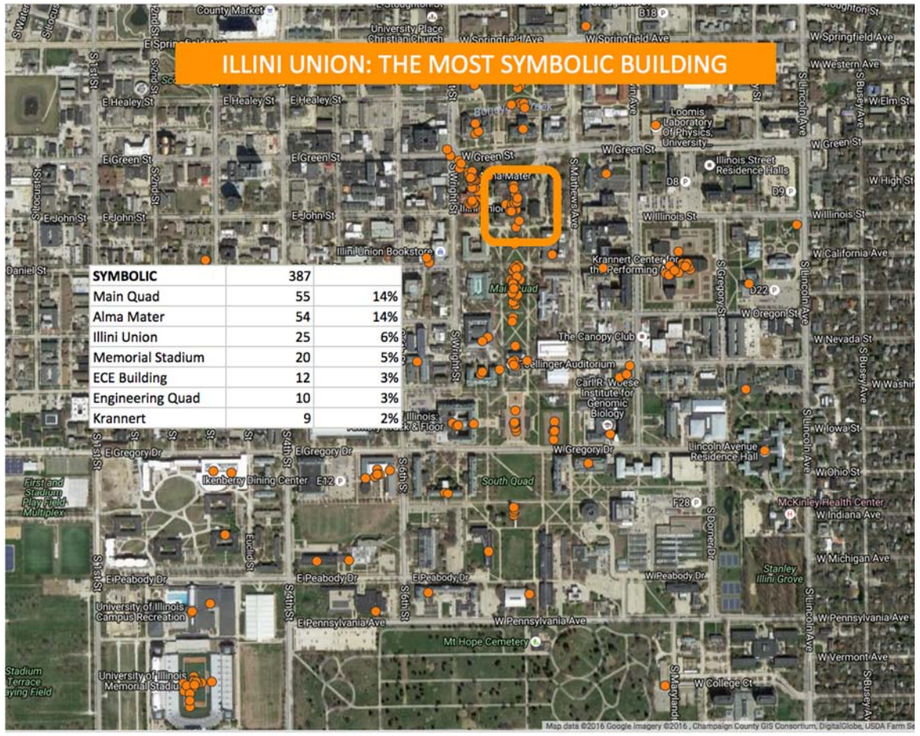
"I also love the fact that there is food in the building, so you don't have to leave when you get hungry. It is the perfect place for a study break as well with the lounging areas."

"I go to the Union to relax."

"It's the central hub of campus and a place where I feel safe, comfortable, and relaxed walking into any time of the day."

Symbolic

The Ilini Union is the third most symbolic place at UIUC and the most symbolic building. Of the 387 symbolic places identified, it was cited 25 times, which represents just under 6% of the places in this category. It follows the Main Quad with 55 mentions and Alma Mater with 54 mentions.



Symbolic Places	**387**
Main Quad	55
Alma Mater	54
Illini Union	25
Memorial Stadium	20
ECE Building	12
Engineering Quad	10
Krannert Center	9

"I see the Illini Union as emblematic of the U of I."

"Its beautiful and I love it."

"I love the Illini Union."

"As an ACES student who is mostly centered on the South Quad, the Union is more like the symbol of the whole campus and makes me feel part of the bigger picture.

Dining Analysis

Dining Analysis

Overview

As part of the study, the consulting team reviewed Illini Union's dining program relative to best practices in the industry, the local competitive market, and other Big 10 unions.

Existing Situation

The Illini Union currently offers seven national brands, one local brand, a buffet restaurant for a fixed price (Colonial Room), and a convenience store (Quad Shop). The Illini Union staff operates Starbucks and the Quad Shop, while all of the other venues are tenants.

The average lunch customer count on a peak day during Fall Semester 2016 is estimated to be over 2,300 as noted in Table 1 that follows, and Starbucks, Qdoba, and Wendy's generate the highest annual sales.

TABLE 1 AVERAGE WEEKDAY ILLINI UNION LUNCH CUSTOMER COUNTS

Peak Weekday Lunch Transactions 10:00 a.m. - 2:00 p.m.	Estimated Counts Fall 2016
Colonial Room	72
Einstein Bros. Bagels	300
Ko-Fusion	100
Qdoba	295
Sbarro	206
Wendy's	358
Auntie Anne's	150
Jamba Juice	145
Quad Shop	260
Starbucks	450
Total Transactions	**2,336**

Knowing that residential students may not use their meal plan at the Union and that there are at least 35 food and beverage venues within three blocks west of the Illini Union, the consulting team wanted to estimate the capture rate of the Union's dining venues. During Fall Semester 2016, 25,510 students were scheduled for class between 11:00 a.m. and 12 Noon, of which 9,570 are in buildings located in the Quad area and 6,342 are in buildings north of Foellinger Auditorium, which is within a short walking distance of the Illini union. If one assumes that all these students eat lunch either before or after class, the Illini Union is capturing 36.8% of them. If one includes and prorates the number of faculty and staff that may be in this zone, the capture rate decreases to 17.9%.

TABLE 2 SCHEDULED CLASSES AND ESTIMATED CAPTURE RATE

University of Illinois, Urbana-Champaign	Tuesday 11 a.m. - 12 Noon Fall 2016
Students Scheduled - Total Campus	25,510
Total Scheduled - Quad Area	*9,570*
Scheduled South of Foellinger Auditorium	3,228
Scheduled North of Foellinger Auditorium	6,342
Enrollment	45,842
Faculty & Staff	17,577
Estimated Lunch Counts - Including Quad Shop	2,336
Estimated Capture Rate of Enrolled Students	5.1%
Estimated Capture Rate of Students North of Foellinger	36.8%
Est. Capture Rate North of Foellinger if Fac. Staff Included	17.9%

The consulting team also reviewed the demand for dining seats, taking into consideration take-out factors, the amount of time a customer occupies a seat, and willingness to share a table with others (seating efficiency factor). Table 3 that follows suggests that there is excess capacity of over 400 seats; however, observationally most of the tables are occupied. In this regard, it is perceived that the dining seats are being used by those who bring their lunch from home and/or by students that are hanging out between classes.

TABLE 3 EXISTING SEATING DEMAND

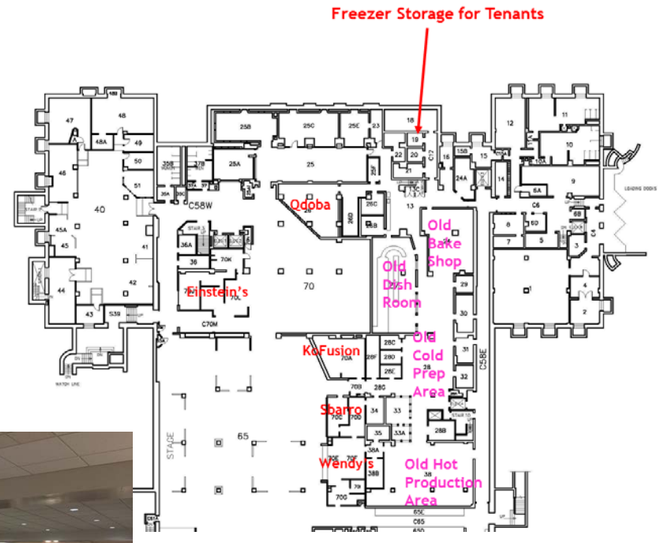
ANALYSIS BASED ON CURRENT CONFIGURATION AND COUNTS											
Meal Period	LUNCH (11 a.m. - 2 p.m.)										
	Retail Eateries										Illini Union Retail Dining
	Einstein Bros.	Qdoba (Mexican)	Ko-Fusion (Asian)	Sbarro (Italian)	Wendy's (Burger)	Auntie Anne's	Jamba Juice	Starbucks	Quad Shop	Colonial Room	
Demand Analysis											
Estimated Peak Meal Customer Count	**300**	**295**	**100**	**206**	**358**	**150**	**145**	**450**	**260**	**72**	**2,336**
% of Total Campus Meals	12.8%	12.6%	4.3%	8.8%	15.3%	6.4%	6.2%	19.3%	11.1%	3.1%	100.0%
Estimated % Participation at Peak Half Hour	20.2%	26.4%	25.0%	25.0%	25.0%	25.0%	25.0%	30.2%	18.0%	25.0%	
Estimated Peak Half Hour Customers	61	78	25	52	90	38	36	80	47	18	523
Estimated Take-Out Factor	75%	25%	25%	25%	25%	100%	100%	75%	100%	0%	
Estimated # of Dine-In Customers	15	59	19	39	67	0	0	20	0	18	236
% of Customers Occupying a Seat 30 minutes	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	50.0%	
% of Customers Occupying a Seat 60 minutes	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	50.0%	
# of Anticipated Occupied Seats	18	70	23	46	81	0	0	24	0	27	289
Seating Efficiency Factor	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	
Total # of Seats Required	**26**	**100**	**32**	**66**	**115**	**0**	**0**	**34**	**0**	**39**	**413**
Number of Existing Seats	*In Wendy's*	*In Wendy's*	*In Wendy's*	*In Wendy's*	*737*	*0*	*0*	*47*	*0*	*75*	***859***

Dining Analysis

Existing Situation

When the Illini Union was first built, a traditional straight line cafeteria was offered on the lower level of the building. Thus, 85.7% of the existing dining seats continue to be on this level. Unfortunately, there is no natural light on this level, which can negatively impact the overall feel and dining experience.

When the University converted from a traditional dining service to tenants, catering production was still occurring in the Union. Consequently, the allocation of refrigeration and dry storage spaces is dispersed throughout the lower level and in many cases, it is not in close proximity to the retail dining venue as indicated in the floor plan that follows.



Currently over 42,000 net square feet is assigned to the Illini Union's Food Service Program, of which 41.3% is dining space. Approximately 5,300 Square Feet is for the previous bakery, cold prep, dish room and hot production areas, which are not being used in this capacity, but rather for storing items not related to food services.

Table 4 that follows depicts the existing square foot allocation for the Illini Union's dining program.

TABLE 4: EXISTING SQUARE FOOT ALLOCATION FOR ILLINI UNION DINING PROGRAM

Existing Food Service Areas	Dining Space	Serving, Production, & Support	Total Net Square Feet Estimate
Level 1 Catering Pantry & Support for Illini Rooms		1,941	1,941
Table and Chair Storage - Existing Illini Rooms			-
Colonial Room, Buffet & Support	1,832	1,203	3,035
Level 2 Ballroom Catering Pantry & Support		1,302	1,302
Level 3 Catering Pantry & Equipment Storage		975	975
Level 3 Table & Chair Storage		668	668
Previous Bakery & Cold Prep Area		2,605	2,605
Previous Hot Production Kitchen		1,589	1,589
Previous Dish Room		1,104	1,104
HFS Catering & Storage in Basement		958	958
Unlabeled Coolers & Storage in Basement		491	491
Einstein Bagel Bros.		1,024	1,024
Qdoba	4,734	775	5,508
KoFusion		898	898
Sbarro's		643	643
Wendy's	9,100	944	10,043
Specialty Shop (Auntie Anne's)		324	324
Specialty Shop (Jamba Juice)		1,123	1,123
Quad Shop / Conv. Store		1,901	1,901
Starbucks (Portion of seating in Courtyard prorated to Starbucks)	1,763	662	2,425
Circulation Assigned to Food Services		2,265	2,265
Shared Support (Lockers, Employee Restrooms, Ice Machine, Waste Management)		1,397	1,397
Total Net Square Feet	**17,429**	**24,790**	**42,219**

The loading dock continues to create challenges for the Illini Union:

- Receiving area is a half level above the storage areas.
- Although considered a two-bay dock, typically only one truck can comfortably be parked at the dock.
- If a vendor is delivering product for the retail venues, the Housing and Food Service Catering Department cannot get access to the dock. Consequently, the catering team usually ends up delivering the food for the Colonial Room and other catered events via the ramps available at public entrances.
- Odors emanating from the dock greet hotel quests who park their cars in the adjacent parking lot, which is not a pleasant experience.

Big 10 Benchmarking Highlights

As part of the Illini Union Study, the Dining Consulting team benchmarked the Big 10 Student Unions to understand the following:

- Management of the dining operations in the Union
- Number and types of retail venues available
- Number and type of national brand restaurants available
- Acceptance of residential meal plans
- Use of tenants
- Catering operator

Three schools did not respond to the survey, so in this regard only the web information was available for the following schools:

- Michigan State University
- Pennsylvania State University
- University of Maryland

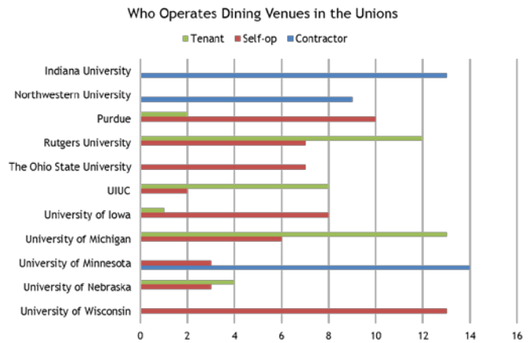
Six of the Big 10 Schools have multiple Unions:

- Michigan State University
- Rutgers University -
- University of Michigan
- University of Minnesota
- University of Nebraska
- University of Wisconsin

Two schools, University of Iowa and University of Nebraska, offer a residential dining All-You-Care-to Eat (AYCE) venue in their Union; Indiana University and UIUC provide a buffet restaurant, while four schools have waiter service restaurants available in the Union:

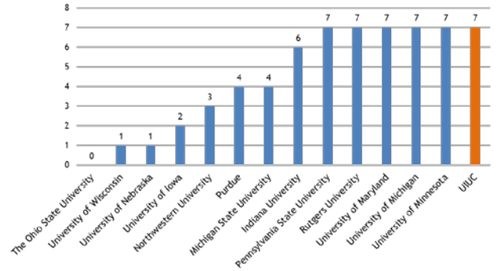
- The Ohio State University
- Purdue University
- University of Maryland
- University of Minnesota

Of the ten schools that responded, three use contractors to operate the dining venues in their Unions; although the University of Minnesota operates its convenience stores. Six schools, including the Illini Union, use Tenants while The Ohio State University and University of Wisconsin do not use tenants. The number of retail venues range from 7 at The Ohio State University and University of Nebraska to 19 at Rutgers University and University of Michigan.



All the unions offer a coffee venue and all the schools except The Ohio State University provide a convenience store in their unions. All schools offer national brands, except for The Ohio State University. The most popular brands available included:

- Starbucks (7)
- Subway (7)
- Panda Express (5)
- Chick-fil-a (4)



In regards to meal plan usage, ten schools allow the residential meal plans to be accepted at the campus unions. Indiana University and UIUC do not allow meal plans to be used in their union. At the University of Nebraska, students may use their meal plan at the East Campus AYCE venue, but not at other retail outlets in the Unions. At Rutgers University, students may only use their meal plan at four student center cafés that are operated by Rutgers Dining Services. Students may not use their meal plan at the other 15 student center dining venues.

Regarding catering operators, seven schools provide exclusive catering to one caterer, while at UIUC and Rutgers University the tenants in the Unions may provide catering in addition to the campus caterer. The University of Minnesota is open to all caterers; however, the food service contractor is promoted as the preferred caterer.

Dining Analysis

Proposed Dining Venues

One of the goals is to invigorate the Illini Union so that it becomes a destination for students to relax, hang out and get a bite to eat throughout the day and in the evening. The Colonial Room is underutilized prime real estate to serve only 72 customers in a 1.5-hour period; so in this regard the consulting team does not recommend that this service be available in the Union in the future. Instead, a destination dining venue is recommended that will serve a broader audience. Also since Starbucks is currently the most popular venue, it is anticipated to be available in the future.

The dining venues need to be efficient and provide flexibility for future trends. In this regard, locating venues throughout the building will provide opportunities to close venues when demand does not merit them being open and without it looking as ghost town or dead space.

The dining seating areas should be more varied, including booths, high tops, counter seating, and community tables, rather than only offering one style of seating. Furthermore, the ambiance of the dining areas should reflect the theme of the dining venue being offered.

In regards to future demand, the consulting team assumed the University will want a mix of food venues, including some national brands and specialty shops in the renovated Union. With the proposed renovation, many of the dining venues will be located on the first level; therefore, it is anticipated that the lunch counts may increase by 10%, at a minimum, and the Illini Union may need to accommodate as many as 2,570 lunch customers.

To estimate the number of seats required in the future, the consulting team assumed that some of the customers using the specialty shops and convenience store, may want to dine in the Union. Therefore, the following take-out factors were incorporated:

- 25% for Retail dining venues
- 75% for Coffee
- 80% for Specialty shops and the convenience store

Other planning assumptions included:

- A 70% seating efficiency factor for all venues.
- 80% of the customers may occupy a seat for 30 minutes during a peak lunch meal, which will be the busiest meal period, while 20% may occupy a seat for 60 minutes.
- Campus constituencies that bring their lunch from home may still use some of the dining seats; however, those students that were previously hanging out in the dining areas will likely use the new comfortable lounge spaces that will become available once the renovation is complete.

Applying the previous assumptions and assuming that 25% of the customers will arrive during the peak half hour, the consulting team estimated that the seating demand for future dining will be approximately 646 seats as illustrated in Table 5 that follows.

TABLE 5: ESTIMATED FUTURE SEATING DEMAND

ANALYSIS BASED ON CURRENT CONFIGURATION AND COUNTS										
	LUNCH (11 a.m. - 2 p.m.)									
	Retail Eateries									
	Lower Level Grille Pub	Destination Dining Café	QSR #1	QSR #2	QSR#3	Auntie Anne's (Specialty Shop)	Jamba Juice (Specialty Shop)	Coffee (Starbucks)	Quad Shop (C-store)	Illini Union Total
Future Demand Analysis										
Estimated Peak Meal Customer Count	**200**	**420**	**330**	**250**	**360**	**150**	**145**	**450**	**265**	**2,570**
% of Total Campus Meals	7.8%	16.3%	12.8%	9.7%	14.0%	5.8%	5.6%	17.5%	10.3%	100.0%
% Participation at Peak Half Hour	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	
Estimated Peak Half Hour Customers	50	105	83	63	90	38	36	113	66	643
Estimated Take-Out Factor	25%	25%	25%	25%	25%	80%	80%	50%	80%	
Estimated # of Dine-In Customers	38	79	62	47	68	8	7	56	13	377
% of Customers Occupying a Seat 30 minutes	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	
% of Customers Occupying a Seat 60 minutes	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	
# of Anticipated Occupied Seats	45	95	74	56	81	9	9	68	16	452
Seating Efficiency Factor	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	
Total # of Seats Required	**64**	**135**	**106**	**80**	**116**	**13**	**12**	**96**	**23**	**646**
Proposed # of Dining Seats	***64***	***135***	***106***	***80***	***116***	***13***	***12***	***96***	***23***	***646***

Note: QSR = Quick Service Restaurant

To determine the catering support required, the consulting team assumed:

- Event spaces will include:
  - An 800 seat Illini Room
  - 274 seat existing ballroom
  - 380 seat other meeting rooms
- Catering pantries will be used for plating, not as finishing kitchens.

Offices if Self-Operated	NSF
Food Service Director	150
Executive Chef	120
Catering Director	120
Catering Supervisor	80
Administrative Support (2)	160
Receiving Office	100
Conference Room	150
Est. Total Offices	**880**

The consulting team also calculated two space programs, with and without a self-operated catering team. If the Illini Union continues to use outside caterers, the preliminary net square feet requirement is estimated to be 28,252 as depicted in Table 6 that follows and assumes that equipment storage is not required.

TABLE 6: PRELIMINARY SPACE PROGRAM IF OUTSIDE CATERERS ARE USED

Preliminary Net Square Foot Estimate Assumes Catering is Provided by Outside Caterers	Dining Space	Serving, Production, & Support	Total Net Square Feet Estimate
Level 2 Catering Pantry & Support	-	960	960
Production & Storage in Kitchen for Existing Ballr	-	-	-
Table and Chair Storage - Existing Ballroom	-	335	335
Level 3 Larger Ililni Room Catering Pantry & Supp	-	1,730	1,730
Production & Storage in Kitchen for Larger Illini R	-	-	-
Table and Chair Storage - Larger Illini Room	-	1,000	1,000
Lower Level Grille Pub	1,029	1,070	2,099
Destination Dining Restaurant	2,160	2,250	4,410
Quick Service Restaurant #1	1,697	1,505	3,202
Quick Service Restaurant #2	1,286	1,260	2,546
Quick Service Restaurant #3	1,851	1,550	3,401
Specialty Shop (Auntie Anne's)	206	680	885
Specialty Shop (Jamba Juice)	199	885	1,084
Quad Shop / Conv. Store	363	1,950	2,313
Starbucks	1,736	1,020	2,756
Shared Support (Lockers, Employee Restrooms, Ic	-	1,530	1,530
Total Net Square Feet	**10,527**	**17,725**	**28,252**

If the Illini Union decides to create its own dining team to provide the catering, the net square feet requirement is estimated to be 34,941 as depicted in Table 7.

TABLE 7: PRELIMINARY SPACE PROGRAM IF ILLINI UNION DEVELOPS OWN CATERING TEAM

Preliminary Net Square Feet Estimate Assumes Catering is Self-Operated by Union	Dining Space	Serving, Production, & Support	Total Net Square Feet Estimate
Level 2 Catering Pantry, Equipment Storage & Sup	-	1,565	1,565
Production & Storage in Kitchen for Existing Ballr	-	1,190	1,190
Table and Chair Storage - Existing Ballroom	-	335	335
Level 3 Larger Illini Room Catering Pantry, Equip.	-	2,810	2,810
Production & Storage in Kitchen for Larger Illini R	-	3,035	3,035
Table and Chair Storage - Larger Illini Room	-	1,000	1,000
Lower Level Grille Pub	1,029	1,070	2,099
Destination Dining Restaurant	2,160	2,250	4,410
Quick Service Restaurant #1	1,697	1,505	3,202
Quick Service Restaurant #2	1,286	1,260	2,546
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Specialty Shop (Auntie Anne's)	206	680	885
Specialty Shop (Jamba Juice)	199	885	1,084
Quad Shop / Conv. Store	363	1,950	2,313
Starbucks	1,736	1,020	2,756
Offices	-	880	880
Shared Support (Lockers, Employee Restrooms, Ic	-	1,430	1,430
Total Net Square Feet	**10,527**	**24,414**	**34,941**

Dining Analysis

The proposed square footage for dining use is anticipated to be less than the current allocation as depicted in Tables 8 and 9 that follow.

TABLE 8: SPACE COMPARISON IF USING OUTSIDE CATERERS

Space Comparison	Existing Dining Space	Existing Serving, Production, & Support	Existing Total Net Square Feet Estimate	Proposed Dining Space	Proposed Serving, Production, & Support if Outside Caterers	Proposed Total Net Square Feet Estimate if Outside Caterers
Illini Rooms Catering Pantry and Support	-	1,941	1,941	-	1,730	1,730
Colonial Room Dining Support	1,832	1,203	3,035	-	-	-
Level 2 Catering Support	-	1,302	1,302	-	1,295	1,295
Level 3 Catering Support	-	1,643	1,643	-	1,000	1,000
Other Catering Support	-	6,747	6,747	-	-	-
Retail Dining	15,596	8,293	23,889	10,527	12,170	22,697
Circulation Assigned to Food Services		2,265	2,265	-	-	-
Offices		In above		-	in Above	
Shared Support		1,397	1,397	-	1,530	1,530
Total Net Square Feet	**17,429**	**24,790**	**42,219**	**10,527**	**17,725**	**28,252**

TABLE 9: SPACE COMPARISON IF SELF OPERATED CATERING

Space Comparison	Existing Dining Space	Existing Serving, Production, & Support	Existing Total Net Square Feet Estimate	Proposed Dining Space	Proposed Serving, Production, & Support if Catering Self-op	Proposed Total Net Square Feet Estimate if Catering Self-op
Illini Rooms Catering Pantry and Support	-	1,941	1,941	-	2,810	2,810
Colonial Room Dining Support	1,832	1,203	3,035	-	-	-
Level 2 Catering Support	-	1,302	1,302	-	1,900	1,900
Level 3 Catering Support	-	1,643	1,643	-	1,000	1,000
Other Catering Support	-	6,747	6,747	-	4,224	4,224
Retail Dining	15,596	8,293	23,889	10,527	12,170	22,697
Circulation Assigned to Food Services		2,265	2,265	-	-	-
Offices		In above		-	880	880
Shared Support		1,397	1,397	-	1,430	1,430
Total Net Square Feet	**17,429**	**24,790**	**42,219**	**10,527**	**24,414**	**34,941**

Prior to the design phase, the consulting team recommends that a quantitative survey be conducted to assist the University in determining the types of foods and brands that will best meet the needs of the campus community and potentially generate the most revenue for the Illini Union.

Hotel Analysis

Hotel Analysis

CONTENTS

1. INTRODUCTION

This report provides an assessment of the existing UIUC Illini Union Hotel ("Hotel") through visual findings and an analysis of building data and financial reports. The findings are compared to local and national data for competitively positioned hotels under the assumption that the Hotel is remodeled. The findings are summarized and recommendations for next steps are provided.

Preparation

The preparation of this report included:

- A review of the Illini Union Facility Study dated January, 2016, existing floor plans and other UIUC documents.
- A working session at Workshop Architects and phone calls with the design team.
- Site visit, facility tour and meeting with hotel staff on August 29, 2016.
- Follow-up phone calls and email correspondence with Carol Bain, Sales Coordinator.
- A collation of applicable reference data.
- A review of a STR Custom Trend Report dated October 14, 2016, attached for reference.

Glossary

This report makes use of several common hospitality industry terms provided below for reference:

- Key: Guestroom
- ADR: Average Daily Rate. ADR = Rooms Revenue / Rooms Sold
- Occ: Occupancy. Occupancy = Rooms Sold / Rooms Available
- RevPAR: Revenue Per Available Room. RevPAR = ADR x Occupancy
  Example: A hotel has 100 keys. ADR = $90. 70 guestrooms are sold, therefore occupancy = 70%. RevPAR = $90 x 70% = $63.00
- CompSet: Competitive Set
- STR/"Star": Smith Travel Research
- Flag: Hotel Brand

Project Goals

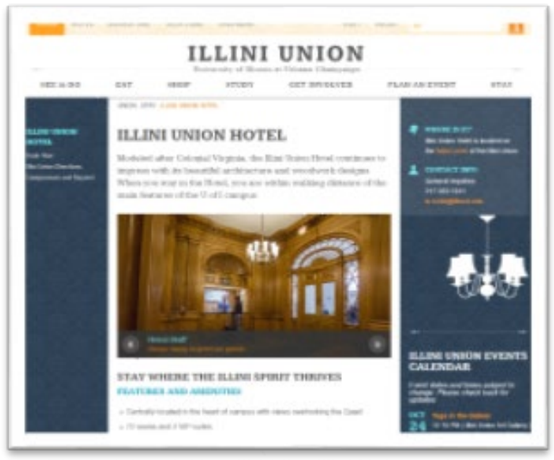
This report is prepared in response to the project scope and goals outlined in the Illini Union Facility Study and subsequent discussions. A key goal is "Improving the amenities, programming and aesthetics of the Illini Union to provide state of the art facilities for the students, faculty and visitors of the University of Illinois".

2. FIRST IMPRESSIONS

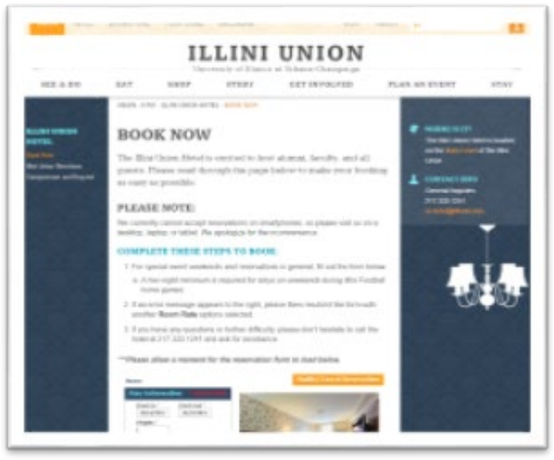
Online Experience

Where does the guest experience begin?

The guest experience often begins long before one arrives at the hotel building. Impressions are formed and expectations are set through word of mouth and commonly online. The Illini Union Hotel's online presence was reviewed. Refer to the following comments and images.



The hotel portal is within the Illini Union website.



There is an online booking engine.

Arrival Experience & Accommodations

Where does the physical experience begin?

A visual survey of the arrival experience and accommodations was undertaken. Refer to the following comments and images.

Negative: No hotel signage

Neutral: Union/hotel lobby

Positive: Front desk is convenient to entrance

Negative: A long distance to the guest elevators

Positive: Access to food & beverage offerings

Positive: Wide guest floor corridor

Negative: Dated furniture and finishes

Negative: Dated furniture and finishes

Negative: Small and outdated bathroom

Neutral: Vending area

Neutral: Business center located in corridor

Neutral: Housekeeping storage

Hotel Analysis

3. EXISTING HOTEL

Existing Operations

The Hotel opened in 1941 with guestrooms on the 4th floor of the original north wing of the Illini Union. In 1963 the hotel guestrooms were relocated to the 3rd and 4th floor of the south wing addition. The Hotel currently operates with 74 keys.

Hotel registration is located on the 1st floor adjacent to the north entrance to the Union. Access to the guestroom floors is via two elevators. The distance from the hotel registration to the elevators is approximately 300 feet.

The guestroom sleeping chambers are small to adequate. The guestroom bathrooms are small with three in-line plumbing fixtures. The Hotel currently has three guestrooms that are called “barrier free” – 358, 394 and 395. All rooms are queen-bedded and do not appear to have clearances that meet ADA guidelines.

The Illini Union includes a large ballroom, several food outlets, a bowling alley, lounge areas and offices. There is currently no hotel fitness center however guests have use of the university’s recreation facilities. Guest parking is provided on a surface lot northeast of the north wing.

The Hotel is operated by the university without a brand affiliation. The Hotel’s basis of business is heavily university-related. The Hotel does not extensively market to non-university business. The Hotel does not operate 365 days per year; it closes during some holiday periods.

Building Summary

The hotel component comprises front desk and front office, guestrooms, guest corridors and associated vertical circulation. Limited back-of house areas that support the hotel are also included. The hotel component areas exclude student union common spaces, retail, food & beverage outlets, meeting space, offices and support facilities.

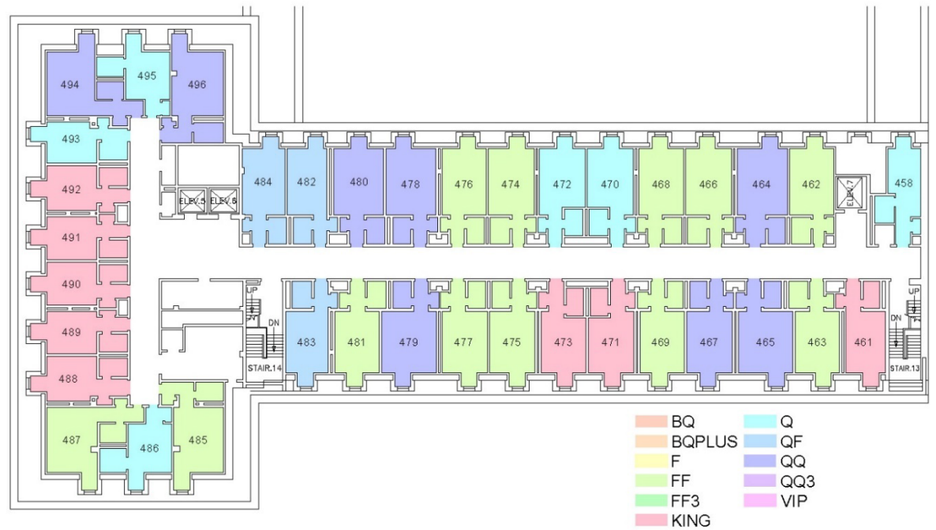
Building Summary		
Floor	**Keys**	**Area**
B	0	0
LL	0	0
1	0	800 (1)
2	0	0
3	37	18,600
4	37	16,300
Total	**74**	**35,700 (2)**

Notes:
(1). The 1st floor hotel area comprises only the front desk and front office area.
(2). The hotel component has a total area of 35,700 gross square feet.

Existing Floor Plans

The following south wing floor plans represent the various guestroom rate types by location.

3rd Floor Plan



4th Floor Plan

4. OPERATING PERFORMANCE

Occupancy

The Hotel provided monthly occupancy statistics for its annual financial periods from 1989 through to August 2016. The last 10 years of occupancy percentages are provided below.

Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
2006-07	58.13	51.99	65.88	79,71	54.43	29.75	46.56	77.11	71.22	72.28	57.17	78.2	**61.86**
2007-08	58.87	58.48	74.56	75.64	56.8	26.35	44.31	67.33	66.98	72.89	62.52	77.8	**61.87**
2008-09	50.51	60.48	70.26	75.98	44.78	26.91	33.40	58.27	68.88	67.11	55.52	74.30	**58.74**
2009-10	41.34	52.59	61.10	71.52	39.87	22.96	29.58	63.86	56.92	66.97	53.35	51.97	**51.00**
2010-11	38.37	45.93	61.71	73.77	40.31	20.41	31.15	63.67	67.74	70.92	43.76	74.29	**52.67**
2011-12	46.22	49.24	61.71	72.24	40.57	29.67	40.45	68.38	66.68	69.25	58.9	69.34	**56.05**
2012-13	35.53	60.99	64.34	73.51	55.65	29.01	49.64	59.44	68.93	69.12	60.31	75.57	**59.55**
2013-14	40.41	59.72	67.19	73.13	50.66	40.72	40.58	66.61	58.66	70.26	50.72	62.27	**56.74**
2014-15	46.99	59.68	65.96	64.26	45.31	29.66	26.23	58.76	59.76	64.04	58.19	59.56	**52.52**
2015-16	42.01	66.09	58.11	65.58	37.02	26.02	32.13	54.99	46.56	59.19	48.39	43.56	**48.30**
2016-17	40.85	48.21											

Notes:

- Over last four years the annual occupancy percentage has decreased.
- There has been significant occupancy decreases in the each of the three highest occupancy months – June, September, October.

Rate

The Hotel does not track rate and revenue on a monthly basis. The Hotel changed reporting systems in Q1 2016. A review of operating reports before and after the reporting change provides an approximate summary of rate and revenue for a one year financial period July 2015 through June 2016. The following table represents various rate codes, their gross rooms revenue and ADR.

Rate Codes	Description	Revenue	ADR
UI TAX	UI Taxable	$329,384.69	$106.29
UI N/T	UI Dept. & Conference	$306,285.24	$107.17
WEB	Web Rate	$319,520.00	$135.22
FSPLAN	Family Visit/Student	$177,081.39	$121.96
RACK	Rack Rate	$127,874.95	$124.51
SPCEVNT	Space Event	$138,379.18	$187.00
INDGRP	Groups Non UI	$63,321.22	$130.83
ILLINI	Sale	$31,587.96	$88.23
STUDENT	Student Winter Sale	$16,279.00	$49.63
ALUMLT	Life Member UIAA	$18,692.16	$126.30
VISIT	Admission Website	$14,571.40	$128.95
ILLINI NT	Sale No Tax	$6,807.00	$86.16
PROSPECT	Prospective Students	$7,979.09	$132.98
SPCN/T	Space Event No Tax	$1,357.00	$135.70
SUMMER	Summer Sale	$548.00	$91.33
COUNTY	From CUCVB Ad	$224.00	$112.00
CAMPUS	From Campus Guide Ad	$124.00	$124.00
Totals		**$1,560,016.28**	**$118.83**
Taxable		*$1,245,567.04*	*$122.34*
Tax Exempt		*$314,449.24*	*$106.70*

Notes:

- The highest rate type is SPCEVNT. This rate was applied during football weekends on 10 nights during the year and achieved 100% occupancy.
- Advertising in the County CVB and Campus Guide did not produce significant revenue.
- The taxable ADR exceeds tax-exempt ADR by 14.7%.

Expenses

A P&L statement was reviewed for a one year financial period July 2015 through June 2016. It included the following summary amounts.

	June '16 YTD
Total Income	$1,513,406.75
Total Expense	$947,832.11
Operating Balance	**$565,574.64**

Notes:

- The Hotel Room Rentals portion of Total Income does not match revenue from the separate rooms revenue reports. This discrepancy may be due to the change in reporting systems or the accounting of revenue.
- The Total Expense item is based on a combination of actual expenses and allocations pro-rated from the overall Union.

5. LOCAL HOTEL MARKET

Hotel Census

The following table lists hotels within two miles of the Illini Union Hotel, sorted by distance.

Hotel	Distance	Keys	Chain Scale	Open
Illini Union Hotel @ IL University	0.0	74	Independent	1941
TownePlace Suites Champaign Urbana	0.2	95	Upper Midscale	Jul-15
Hampton Inn Champaign Urbana	0.5	130	Upper Midscale	Mar-95
America`s Best Inn Urbana	0.9	56	Economy	Jun-64
The Lincoln Lodge	1.0	30	Independent	Jun-36
Urbana Landmark Hotel	1.0	128	Independent	Jun-77
I Hotel & Conference Center	1.0	126	Independent	Aug-08
Hyatt Place Champaign Urbana	1.1	145	Upscale	Jun-14
Homewood Suites Champaign Urbana	1.2	98	Upscale	Apr-07
Courtesy Motel	1.2	35	Independent	Jun-76
Hilton Garden Inn Champaign Urbana	1.2	99	Upscale	Nov-06
Hawthorn Suites by Wyndham Champaign	1.3	199	Midscale	Oct-86
Sleep Inn Champaign Urbana University Area	1.5	65	Midscale	Feb-95
Wyndham Garden Hotel Urbana Champaign	1.5	198	Upper Midscale	Apr-97
Comfort Suites Urbana Champaign UIUC Area	1.6	86	Upper Midscale	Jul-09
Holiday Inn Express Hotel & Suites UIUC Area	1.6	74	Upper Midscale	Dec-05
Ramada Urbana Champaign	1.6	68	Midscale	Sep-95
Home2 Suites Champaign Urbana	1.6	104	Upper Midscale	Feb-16
Knights Inn Urbana Champaign	1.7	67	Economy	Jul-00

Hotel Analysis

STR Custom Trend Report
A STR Custom Trend Report was obtained to review the rate and occupancy of five nearby upscale and upper midscale hotels. The hotels form the likely competitive set that a refurbished and repositioned Illini Union Hotel would compete against. The competitive set includes:

- TownePlace Suites by Marriott
- Hampton Inn by Hilton
- Hyatt Place
- Homewood Suites by Hilton
- Hilton Garden Inn
- I Hotel & Conference Center*

*While the I Hotel & Conference Center would be in the competitive set it does not participate in reporting to STR and therefore its operating statistics are not available for review. The five other hotels comprise 567 rooms.

The STR report provides cumulative totals and averages that prevent the specific review of individual hotel performance. Results are provided for the period of July 2014 thru August 2016. The following table lists the Illini Union Hotel's occupancy alongside a summary of STR's data.

	Union Hotel	Competitive Set		
Date	**Occ.**	**Occ.**	**ADR**	**RevPAR**
Jul 14	46.99	61.03	112.86	68.88
Aug 14	59.68	77.04	120.10	92.53
Sep 14	65.96	77.44	129.28	100.12
Oct 14	64.26	82.58	138.58	114.44
Nov 14	43.51	69.10	136.32	94.19
Dec 14	29.66	50.12	105.91	53.08
YTD 2014	**na**	**na**	**na**	**na**
Jan 15	26.23	57.54	110.00	63.29
Feb 15	58.76	79.00	124.55	98.40
Mar 15	59.76	71.74	114.80	82.36
Apr 15	64.04	75.90	136.76	103.80
May 15	58.19	77.01	136.99	105.49
Jun 15	59.56	81.07	118.80	96.31
Jul 15	42.01	65.52	108.52	71.11
Aug 15	66.09	80.01	124.21	99.39
Sep 15	58.11	80.05	133.69	107.01
Oct 15	65.58	79.13	140.36	111.07
Nov 15	37.02	59.09	130.18	76.93
Dec 15	26.02	50.52	100.21	50.63
Total 2015	**54.93**	**71.09**	**124.37**	**88.41**
Jan 16	32.13	49.02	101.10	49.56
Feb 16	54.99	69.17	121.01	83.70
Mar 16	46.56	66.35	108.64	72.09
Apr 16	59.19	75.53	137.73	104.03
May 16	48.39	66.67	138.03	92.02
Jun 16	43.56	72.96	110.82	80.85
Jul 16	40.85	67.91	104.98	71.29
Aug 16	48.21	78.39	117.43	92.06
YTD 2016	**46.74**	**68.19**	**118.15**	**80.57**

Source: STR, UIUC

Notes:
- Occupancy of the Illini Union Hotel trails the competitive set every month. This suggests that there may be an opportunity for increases in the Hotel's occupancy in the market.
- The competitive set's YTD ADR through August 2016 is $118.15.
- The Illini Union Hotel's YTD ADR through June 2016 is $118.83 (see section 4, Rate, above).

The STR report also provides data for each day of the week as summarized below.

Three Year Occupancy (%)								
	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total Year
Sep 13 - Aug 14	50.4	71.6	76.8	74.9	66.4	66.9	76.6	69.0
Sep 14 - Aug 15	47.3	70.9	80.4	79.8	72.3	75.4	79.2	72.2
Sep 15 - Aug 16	42.8	63.1	75.1	74.9	69.3	72.8	76.5	67.8
Total 3 Year	**45.3**	**67.1**	**77.5**	**77.0**	**70.4**	**73.5**	**77.7**	**69.8**

Three Year ADR								
	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total Year
Sep 13 - Aug 14	107.30	118.95	120.60	120.40	116.54	114.00	117.24	116.90
Sep 14 - Aug 15	113.17	119.46	120.72	119.72	119.48	137.79	136.32	124.48
Sep 15 - Aug 16	107.22	112.52	117.39	118.03	117.11	136.21	134.99	121.58
Total 3 Year	**109.90**	**116.18**	**119.09**	**118.94**	**118.12**	**135.45**	**134.32**	**122.54**

Three Year RevPAR								
	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total Year
Sep 13 - Aug 14	54.03	85.18	92.61	90.18	77.34	76.27	89.83	80.71
Sep 14 - Aug 15	53.54	84.73	97.06	95.56	86.38	103.83	107.95	89.85
Sep 15 - Aug 16	45.93	71.05	88.15	88.46	81.21	99.15	103.23	82.49
Total 3 Year	**49.79**	**77.95**	**92.26**	**91.61**	**83.16**	**99.52**	**104.30**	**85.53**

Source: STR

Notes:
- Occupancy is highest on Tuesday, Wednesday and Saturday nights. This is indicative of mid-week corporate demand and Saturday night leisure demand.
- The Illini Union Hotel does not conduct daily reporting so no comparison against the competitive set were made.

6. NATIONAL COMPARISONS

University Hotels

A selection of university hotels is listed below and includes the year of opening and the number of keys.

University	Hotel	Open Date	Keys
University of Illinois	**Illini Union Hotel**	**1941**	**74**
Indiana University	IMU Biddle Hotel and Conference Center	1959	189
Michigan State University	Kellogg Hotel & Conference Center	1952	160
Ohio State University	The Blackwell Inn and Pfahl Conference Center	2002	151
Penn. State University	The Nittany Lion Inn	1931	223
Penn. State University	The Penn Stater Hotel & Conference Center	1994	300
Purdue University	Union Club Hotel	1929	192
Rutgers University	Rutgers University Inn and Conference Center	1969	32
University of Iowa	The Iowa House Hotel	1965	96
University of Maryland	The Hotel at UMD	2017	297
University of Michigan	Inn at the League	1931	21
University of Notre Dame	Morris Inn	1952	150
University of Wisconsin	The Wisconsin Union Hotel-Madison	2011	60
University of Wisconsin	The Fluno Center for Executive Education	2000	100
University of North Carolina	The Carolina Inn	1924	185
University of Virginia	Boar's Head Inn	1964	175
Virginia Polytechnic Institute	The Inn @ Virginia Tech	1968	147
Virginia Polytechnic Institute	The Hotel Roanoke & Conference Center	1882	330
		Average:	160

Source: STR, individual hotels

Notes:

- Although several hotels are integrated into union buildings, most are in standalone buildings. Hotels integrated into unions:
  - Illini Union Hotel
  - Purdue Union Club Hotel
  - Iowa House Hotel
  - University of Michigan Inn at the League
  - The Wisconsin Union Hotel-Madison
- The average hotel size is 160 keys.

Chain Scale

The Chain Scale is tracked by STR based upon the national average daily rate of hotel chains. STR tracks approximately 200 hotels brands. Several recognizable brand families are shown below.

	Marriott* (*Marriott acquired Starwood in September 2016)	Starwood*	Hilton	Hyatt	IHG	Other Hotels
Luxury	Ritz Carlton	St Regis	Waldolf Astoria	Grand Hyatt		
	JW Marriott	Luxury Collection	Conrad	Park Hyatt		
	Edition	W		Andaz		
Upper Upscale	Marriott	Westin	Hilton	Hyatt	Inter-Continental	
	Renaissance	Sheraton	Embassy Suites		Kimpton	
	Autograph	Le Meridien	Curio			
Upscale	Courtyard	Aloft	Hilton Garden Inn	Hyatt Place	Crowne Plaza	I Hotel
	Residence Inn	Four Points	DoubleTree	Hyatt House	Hotel Indigo	
	Springhill Suites	Element	Homewood Suites		Staybridge Suites	
Upper Midscale	Fairfield Inn		Hampton Inn		Holiday Inn	Country Inn
	TownePlace Suites		Home2 Suites		Holiday Inn Express	Drury Inn
					Comfort Suites	Wyndham Garden
Midscale					Candlewood	Illini Union Hotel
						Quality Inn
						Best Western
Economy						America's Best Inn
						Super 8
						Motel 6

Notes:

- A selection of Urbana-Champaign's flagged hotels is highlighted.
- The local hotels are found in the Upscale, Upper Midscale, Midscale, and Economy segments.
- The Illini Union Hotel existing operation would place it in the Midscale segment of the chain scale.

Hotel Analysis

Building Data
The Illini Union Hotel is currently in the Midscale segment of the chain scale. It can be repositioned to be comparable to an Upper Midscale or Upscale hotel. A building analysis is provided comparing the Illini Union Hotel against the prototypical design for branded hotels within the Upper Midscale and Upscale segments.

	Upper Midscale		Upscale			
Building Data	**Comfort Suites**	**Hampton Inn**	**Marriott Courtyard**	**Hilton Garden Inn**	**I Hotel**	**Union Hotel**
Floors	3	4	4	5	5	3 (1)
Keys	85	101	120	136	126	74 (2)
Gross Area	50,900	63,200	67,300	85,300	not available	35,700
Gross Area per Key	598.8	625.7	560.8	627.2	not available	482.4 (5)
Keys per Typical Floor	34	31	37	31	32	37
Gross Area - Typical Floor	18,000	15,300	16,700	15,000	15,100	18,600
Gross Area per Key Typ. Floor	529.4	493.5	451.4	483.9	471.9	502.7 (3)
Net Meeting Area	400	557	1,300	2,700	20,776	0 (6)
Net Meeting Area per Key	4.7	5.5	10.8	19.9	164.9	0.0
1st Floor FOH Area	2,500	2,500	3,800	5,500	not available	0 (7)
1st Floor FOH Area per Key	29.4	24.8	31.7	40.4	not available	0.0
Guestroom Dimensions (3rd Floor Guestrooms)						
Width - King	12'-0"	12'-0"	13'-1"	12'-0"	13'-0"	11'-6"
Width – 2-Bedded	12'-0"	12'-0"	13'-1"	12'-0"	13'-0"	11'-6"
Depth - King	30'-0"	23'-8"	24'-8"	25'-11"	26'-0"	16'-6"
Depth - 2-Bedded	34'-6"	26'-8"	27'-8"	27'-11"	26'-0"	19'-2"
Net Area- King	360	284	323	310	340	270 (4)
Net Area- 2-Bedded	414	320	363	335	340	320 (4)

Notes:

- Examples of Upper Midscale hotels include Comfort Suites and Hampton Inn.
- Examples of Upscale hotels include Marriott Courtyard and Hilton Garden Inn.
- I Hotel data is estimated based upon available public information.
- Compared to other hotels, the Illini Union Hotel has:
    1. A similar number of floors.
    2. Fewer guestrooms.
    3. The 3rd floor area is referenced. The gross area per key on a typical floor is similar to other hotels.
    4. Average guestroom sizes on the 3rd floor are similar to other hotels. 4th floor guestroom sizes are smaller.
    5. A low gross area per key ratio. This is because the Illini Union Hotel area does not include public areas and meeting space.
    6. No Union meeting space is included.
    7. The Hotel's 1st floor FOH (front-of-house) area is listed as "0". This assumes that the Union's common areas are not allocated to the Hotel.

7. SUMMARY FINDINGS

1. The Hotel's market base is university-related individuals and groups.
2. The hotel does not proactively market to non-university businesses or to leisure guests.
3. There is not a strong online presence.
4. The hotel is conveniently located on campus.
5. The route from the front desk to the elevators is long.
6. Management and front line staff were friendly and very welcoming. This is an important and positive attribute.
7. The facility is dated - furnishings, finishes, technology, amenities.
8. Operating performance is not currently measured using standard industry practices.
9. There is room for growth in rate and occupancy.

8. RECOMMENDATIONS

1. Decide whether to pro-actively market to non-university business.
2. Confirm the competition and positioning in the market.
3. Create an online presence and connect to a GDS.
4. Improve the arrival experience; provide signage at the north driveway.
5. Provide an onsite fitness center, improve the food offerings and sell alcohol.
6. Measure operating performance using standard industry practices.
7. Invest in guestroom and corridor upgrades:
    a. Key count:
        i. The Hotel currently has 74 keys including two suites – 365/367 and 377/379.
        ii. The proposed plans dated November 30, 2016 appear to eliminate 15 keys so the Hotel would have 59 keys.
    b. Accessibility:
        i. A 59-key hotel would require four ADA guestrooms of which one would have a roll-in shower. The ADA guestrooms must be spread across various room types. Based on the floor plans the ADA rooms could be 377, 386, 485 and 496.

c. Scope. The guestroom plans below illustrate various extents of guest-room remodeling.

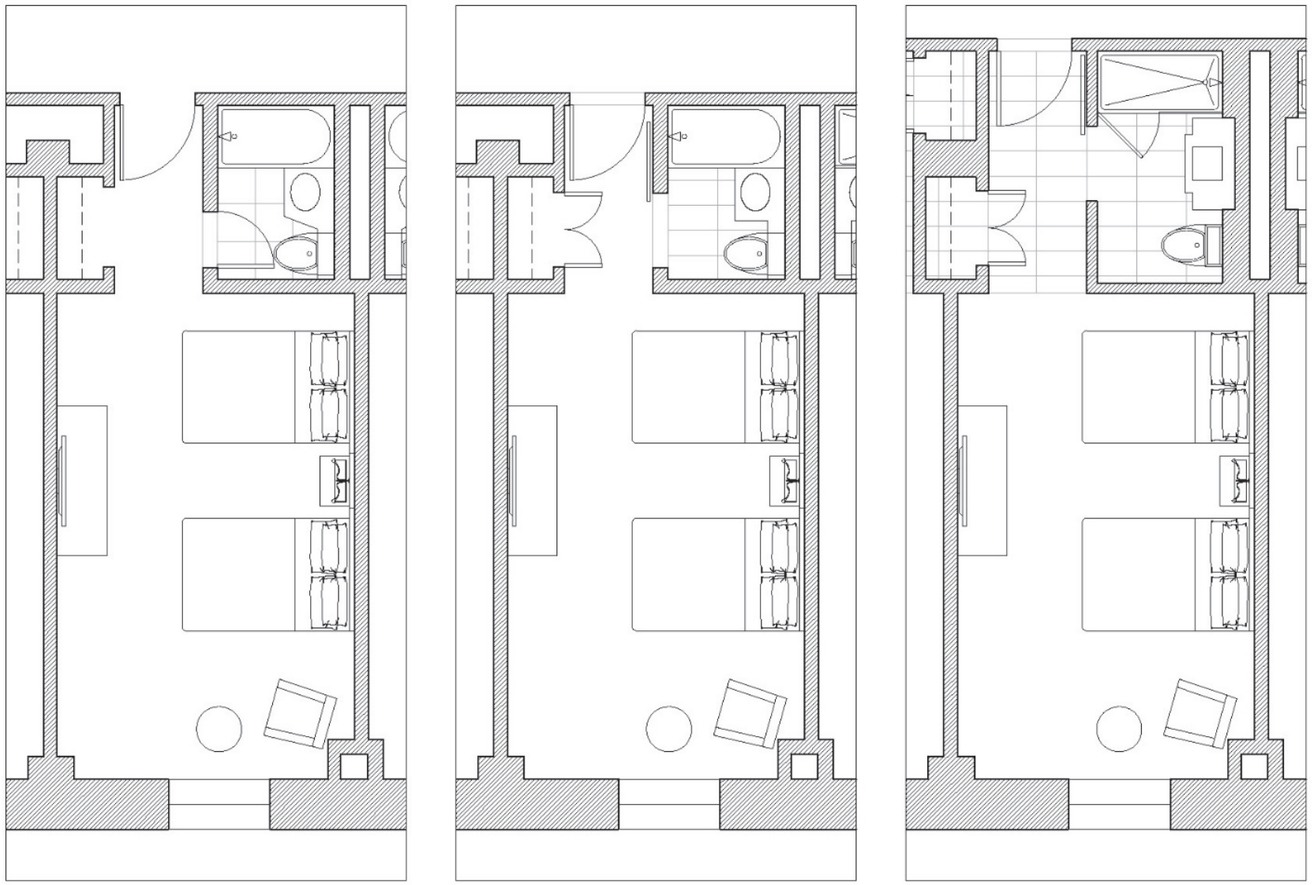
i. The “Refinish” plan is the least expensive remodeling and addresses finishes only.
ii. The “Minor Remodeling” plan includes additional work to address the bathroom door with the intention of making the bathroom feel larger.
iii. The “Major Remodeling” plan enlarges the guest bathrooms into the wide corridors. This is accomplished on the south facing guestrooms on each floor representing 24 keys in total.

d. Financial:

i. A 59-key hotel is generally a marginal financial operation. However, as a part of a larger complex, the Union is this case, expenses can be pro-rated to influence profitability.
ii. While a major guestroom remodeling may have little economic impact to the hotel itself, it can be accomplished when the hotel remodeling expenditures represent a relatively small amount of the total project cost.
iii. A decrease in the number of keys will result in a reduction in top line room revenue. However, there may be a greater impact on bottom line profitability because the fixed expenses (salaried general manager and executive staff, energy costs, etc.) are already in place. The expenses related to the small difference in the quantity of guestrooms is incremental (hourly wage housekeeping staff, some operational supplies).

Hotel Analysis

Guestroom Plans



REFINISH
- New flush-valve toilet
- New counter & lavoratory
- Reglaze tub
- New floor and wall tile
- New guestroom furnishings

MINOR REMODELING
- Bathroom barn door
- New flush-valve toilet
- New counter & lavoratory
- Reglaze or replace tub
- New floor and wall tile
- New guestroom furnishings
- Upgraded HVAC system

MAJOR REMODELING
- Expand bathroom into east-west corridor; reconfigure closets
- Bathroom barn door
- New tank-top toilet
- New counter & lavoratory
- New shower, glass enclosure
- New floor and wall tile
- New guestroom furnishings
- New HVAC system

Note: Proposal includes “major remodeling” of the guest rooms on the south side of the level three and level four east-west corridors and minor remodeling for the other guest rooms.

Historic Preservation Analysis

Historic Preservation Analysis

Overview

The following is an assessment of the Illini Union building's historic significance and integrity. In addition to a review of documentation provided by the university and other historical resources, a site investigation was performed in September 2016 by Johnson Lasky Kindelin Architects. Information gathered at the site as well as content of conversations with the Campus Preservation Architect and Project Team is presented in this assessment. Tasks performed as part of this investigation included a visual survey to identify the key features, review of historic drawings and photographs, and review and assessment of components and spaces of the interior and exterior of the building.

Building Construction:	1939-1941, expanded 1960
Style:	Georgian Revival
Designed by:	1939: Ernest Stouffer, University Architect, Howard Lovewell and John Calvin Leavell 1960: Ernest Stouffer, University Architect, Jameson and Harrison, with Eggers and Higgins Design Architects.
Located at:	1404 West Green Street, Urbana, IL

Summary:

JLK reviewed historic plans with those assembled to review and create a preliminary diagram of preservation zones prioritized as follows:

- Primary: highest caliber historic material or space that must be preserved and maintained in renovation scheme
- Secondary: historic material or area that, due to location or condition, may be altered in the course of renovation but should be maintained if possible
- Tertiary: no historic importance associated with material or space and can be reused as needed.

Inventory of Primary Exterior Spaces: 1939 Building

- Redbrick Masonry Stone walls and Limestone trim
- Decorative wood elements including columns, windows, cornice, and other details
- Wrought iron Stairs and Ornament at East Elevation
- Hardware, light fixtures and all period accoutrements

Inventory of Primary Exterior Spaces: 1960 Building

- Redbrick Masonry Stone walls and Limestone trim
- Decorative wood elements including columns, windows, cornice, and other details
- Wrought iron Stairs and Ornament at East Elevation
- Hardware, light fixtures and all period accoutrements

Inventory of Primary Interior Spaces: 1939 Building

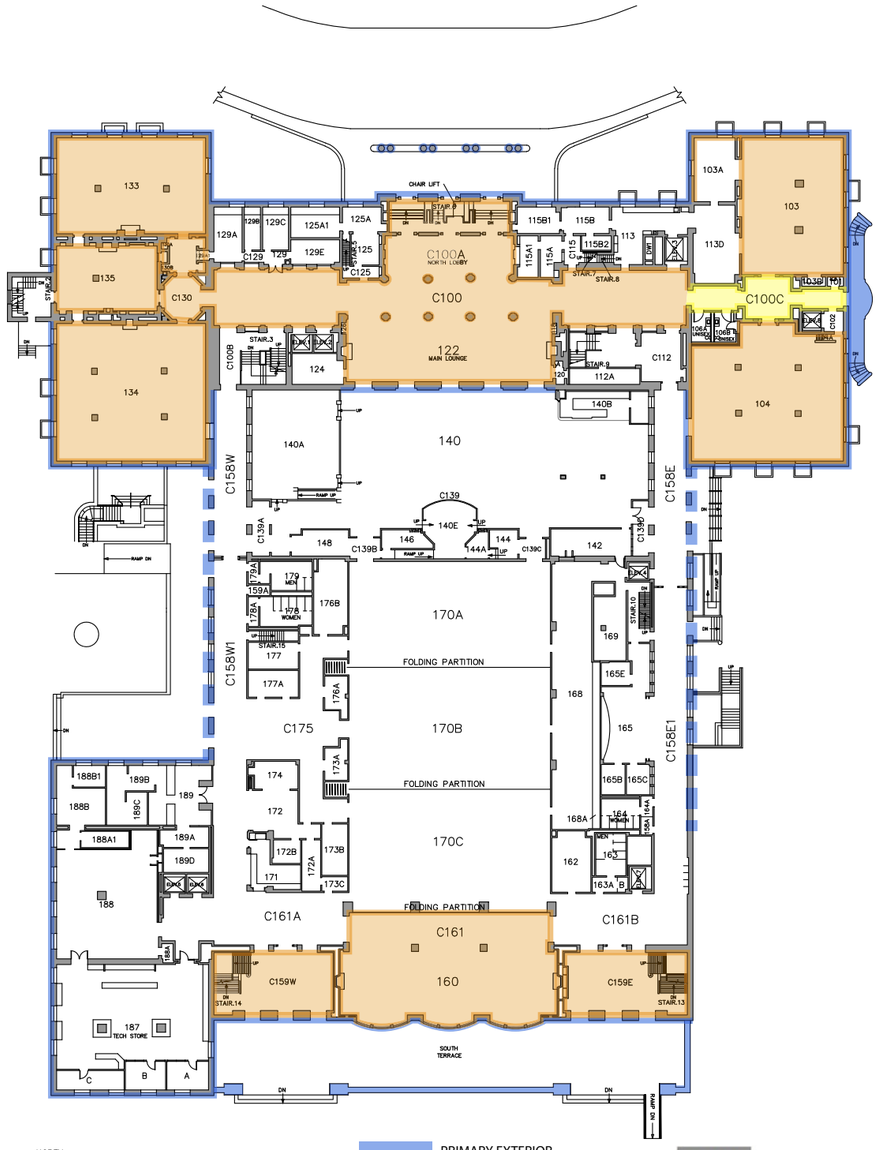
- First floor Vestibule, hallways, and lounge
- Pine Lounge
- President's Lounge
- Gallery
- Vending Room
- Colonial Room
- Stairways
- Elevator Lobbies
- Second Floor Corridor
- Second Floor Ballroom
- East entrance and hallway – (a 5-rated space per interiors survey)

Inventory of Secondary Interior Spaces: 1939 Building

- Second Floor Offices at West side of plan (Called West Hall and Faculty Lounge and meeting Rooms
- Third Floor East Lobby and Passage
- Third floor West Lobby, Passage, Lounge Room
- Fireplaces in the North and South Banquet rooms

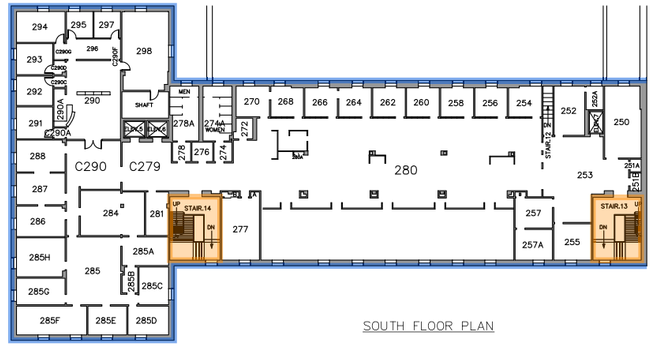
Inventory of Primary Interior Spaces: 1960 Building

- First floor South Lounge Paneled walls and columns
- West Vestibule and Stairs to third floor
- East Vestibule and Stairs to third floor



NORTH FIRST FLOOR PLAN

0 16 32 48 64 FEET



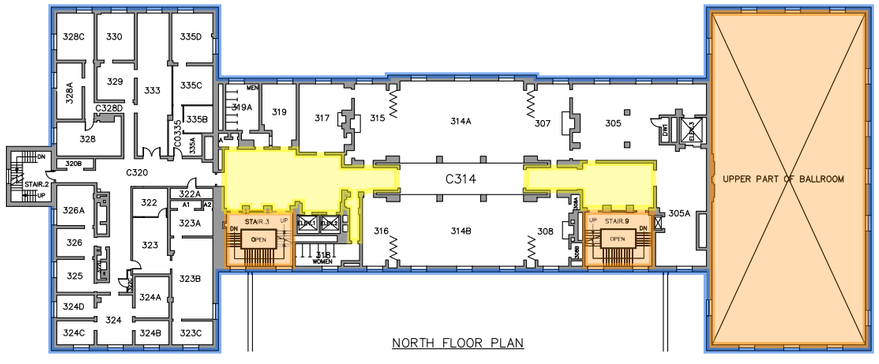
NORTH SECOND FLOOR PLAN

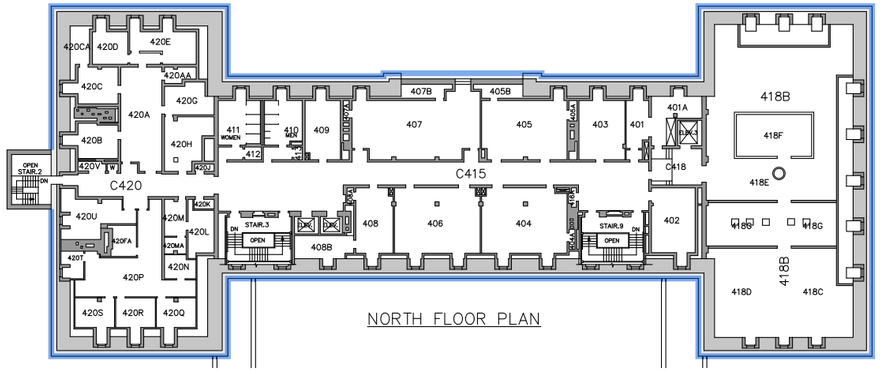
0 16 32 48 64 FEET

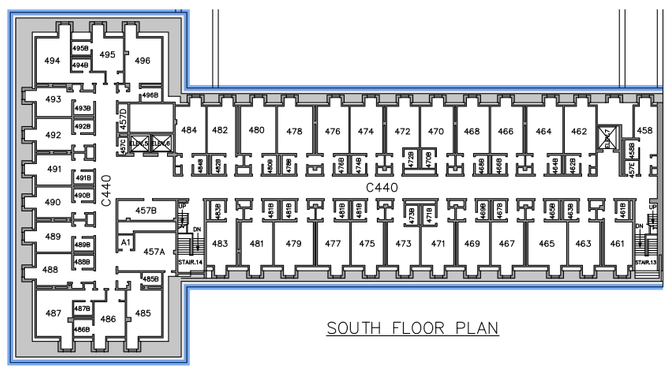
PRIMARY EXTERIOR
PRIMARY INTERIOR
SECONDARY INTERIOR

JOHNSON LASKY KINDELIN ARCHITECTS

Historic Preservation Analysis







NORTH THIRD FLOOR PLAN 0 16 32 48 64 FEET

PRIMARY EXTERIOR
PRIMARY INTERIOR
SECONDARY INTERIOR

JOHNSON LASKY KINDELIN ARCHITECTS

NORTH FOURTH FLOOR PLAN 0 16 32 48 64 FEET

PRIMARY EXTERIOR
PRIMARY INTERIOR
SECONDARY INTERIOR

JOHNSON LASKY KINDELIN ARCHITECTS

Introduction

The original Illini Union was designed in 1939 and construction was completed in 1941. The building was dedicated in 1942 by Eleanor Roosevelt. The Union was designed to meet the needs of the nascent Quadrangle. As university populations grew, the Union and its services grew along with it. Program requirements such as rooms for student meetings, study, dining, and support for student life events and organizations that had so neatly fit into the first and second floors of the original building soon became cramped.

A mere 20 years after the original union was completed, it received an addition that nearly doubles its size. The 1960 addition was designed to honor the 1939 building's massing, style, detail and materials. Both feature red brick masonry with limestone accent courses and elements, same-sized wood double hung windows, and hipped roof. The roofline of the addition mimics the roofline of the existing original building exactly. Dormers are the same as are the twin cupolas.

The plan and massing of the 1939 original building is easily discernible in the larger and extended plan of the Illinois Union as it currently exists. It is important to note that according to the university all areas with paneling are considered to be historic and cannot be altered. The original Union (1939) has a great deal of original material remaining within the original room and corridor configurations on floors 1-4.

The 1960s addition has been modified several times on all floors, but has some original finishes intact at the first floor lounge area and at the stairwells, which should be maintained in their original condition. The interior spaces in the 1960s building are not to the high quality of the north building, except in these few areas. The exterior conditions of both the original building and the addition are very good and the masonry, wood windows and trim, and roof elements are kept in very good repair. The courtyard, and its enclosing wings, have been modified over the years to expand and enclose the first floor: very little original material remains in this area.

Site

Similarities between the 1939 and the 1960 buildings extend to the site. The south Terrance in 1939 fronted a strong east west axis and walkway which led from the Natural History Building and Harker Hall to the east to Altgeld Hall to the West. The relationship between the original 1939 building and the quad was replicated at the south porch of the 1960 addition. The new South terrace presides over the north end of today's Quadrangle and the terrace and its landscaping abuts the east west sidewalk that defines the Quad's north side. The terrace placement and layout as well as its design elements (such as the balustrade) is based on the design of the original on the 1939 South Terrace.

The West Terrace sits between the west wings of the 1939 and 1960 buildings. It includes a modern terrace, seating and iron handrails. The area is dominated by the statue of Diana which sits in a fountain surrounded by ornamental landscaping and benches. The 1900 bench also sits in this area. The Diana statute must be retained as part of the Union. Ideally it would be situated in a similar scene that includes with casual seating and greenery The Diana statue was a gift to the union and originally adorned a building in Chicago's loop.

Altgeld Hall and Union Beyond

Diana Statue and Union Beyond

Site and View Corridors

In addition to the historic building and materials, the view of and from the Illini of Union of worthy of discussion. At the north, the north elevation of the union is easily seen from the main street, and this clear open approach should be maintained in the new site plan. Likewise, the Union anchors the north side of the Main Quadrangle. View to and from the Union at the Quad must be maintained. Primary significant views are of the north building along the Green Street façade and the view of the Union from the North Terrace of Foellinger Hall. Secondary view corridors are the east and west approaches to the building.

Significant Height Benchmarks

The cornice at the upper reaches of the masonry walls is considered an important horizontal element and is carried throughout the 1939 and 1960 building. The uppermost ridge line of the roof is significant and will be the maximum allowable height for any new mass in a proposed reuse design, such as new infill element at the courtyard.

Historic Preservation Analysis

Discussion of Historic Elements and Areas

Exterior Elevations and Elements: The Original Union

The current view of the original Union shows that it's north and west facades are almost unchanged since it was photographed after construction was completed in 1941. Masonry, entrance portico, windows, doors, cupola, and all elements appear to be in good repair. All elements on the historic elevations are of importance to the study. The north elevation is dominated by a gable front three-story entrance bag with three archways and a porte cochere. The doors and fan lights in this area, the wood columns, and all wood ornament is significant. Flanking this central portico are masonry walls with stone belt courses, graceful windows with stone lintels and sills, fine arched windows and compass windows. Above the cornice line the dormers are embellished with a good deal of wood trim, the central pediment has a compass window, and tall chimneys flank the historic cupola.

North, east, west, and south elevations (where intact) are of primary historic importance. The south elevation was altered on the first floor to provide access from the south for two 1960-era corridors, and the courtyard has been enclosed and altered several times. The facades at the upper floors of the south elevation are intact.

There have been some modifications over time but these do not interfere or detract from the historic integrity of the building overall. The north entrance door has been modified so that the entry could e reconfigured to allow a wheelchair ramp to be installed. A fire stair tower was added to the west elevation, and additional egress stairs were added at the wrought iron balcony on the east side at the ballroom. These elements do not detract from the building's overall impression. They are reversible changes made in a sensitive manner to resolve code issues in the original plan.

The treatment of the south elevation has been more varied. The union was originally a stand-alone building, and the addition was designed to extend the south side of the plan. The South facade has seen many additions, leading up to the full enclosure of a once-open courtyard space. This has impacted the south of the north building in several ways. First, the iron balcony at the second floor has been removed. The exterior wall near the east stair case has been opened to encourage movement between the north and south wings buildings. Finally a coffee shop was added at the east side of the courtyard which has had unknown impact on the exterior brick. Throughout this area exterior windows and doors have been enclosed or fixed in place (as ornamental elements) but there will doubtless be some damage where the roof of the atrium has been attached to the existing brick walls.

North Facade of the Original Union

South Facade of the South Addition to the Original Union

Significant Interior Elements of the 1939 Building

Introduction

The Original Union has many areas of Primary historic importance. Spaces and materials are well maintained and some still serve their original purposes. The attached plans show the areas that have been identified as historic. As a rule of thumb within the University, any room with wood paneling is considered historic. In addition, all windows and window trim at exterior walls or dormers should be considered historic and remain intact. A brief catalog of spaces follows. Note that in most cases the walls, ornament, doors, windows, casework, cork, wood, or terrazzo floors, plaster ceilings, and other ornament are all considered historic. An Interiors overview survey of the Illini Union was performed by Architecture Faculty Member Paul Kapp and several of his Preservation Studies students during the Summer and Fall of 2011 for the Ad Hoc Faculty Historic Preservation Evaluation Subcommittee (AHFHPES) of the Chancellor's Design Advisory Committee. This was also reviewed by the CDAC and accepted on June 25, 2012. This study noted that the Illini Union first floor north main entrance and adjacent butternut paneled lounge and Pine Room are considered to be the eighth most important interior spaces of the "Top Ten" rated UIUC interiors. We recommend that the majority of rooms and spaces on the first floor, and most of the corridors and remaining rooms on the upper floors be considered of primary historic importance and treated as such.

North Entry Vestibule

The north entry vestibule is significantly intact. The ceiling is plaster, the walls have plaster ornament, and the floors are terrazzo. An ADA ramp was cut into the center bay of stairs, and the center arched doorway into the space from the exterior has been permanently closed. A radiator has been built into this space at the center bay.

Modifications were made to accommodate wheel chair users, but the current configuration does not conform to current ADA standards. A new ADA route at the north side of the building should be investigated. If possible, a new ramp should be built in an adjacent space. The center stairs should be returned to their original configuration. All three doorways to the exterior should be operable doors. It may be possible to make the easternmost door the ADA entrance with a power operator . A doorway could be cut into the eastern wall of the vestibule and ramp could be built in the adjacent space. The top of this new ramp could lead to the arched opening at the upper vestibule entrance. The center door and terrazzo stairs would then be returned to their original use and configuration.

North Entry Vestibule

Front Desk

North Lounge

Historic Preservation Analysis

Main Entrance and First Floor Corridor

Much of the material at the main entrance and central corridor is intact. Protected elements include all the wood paneling, the cork floor, plaster ceilings, and some light fixtures. The West corridor which leads to the President's Lounge is in very good condition. The east corridor as it extends to the Colonial Room and east entrance is still intact. At the east end of this corridor, there is an original service doorway for access to the Colonial Room, the vending room and service areas. These doors maintain their original configuration and much of their original hardware.

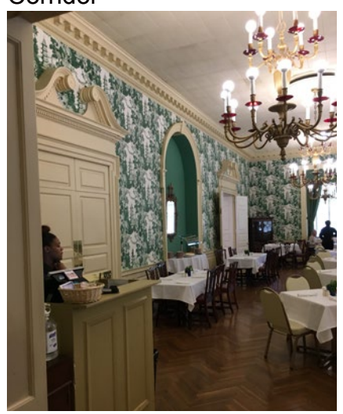
Recommendations: all finished wood services including paneling, trim, doors, and other elements should be retained. The cork floor should be buffed and retained. The ceiling retains its original plaster finish and is in good condition. At the east end of the corridor all painted surfaces should be investigated to determine whether they were originally finished or painted. At the farthest east vestibule and entrance the services should be retained. At the west end of the court corridor at the President's Lounge, all finishes should be retained.

Main Lounge

Like the Main corridor, the main lounge retains most of its original character. This includes wood paneling, a carpeted floor, plaster ceilings, and two elaborate fireplaces at either side of the room. The five openings in the south wall are French doors as the original design drawings show, and these are kept open to allow connection to the enclosed court at the center of the plan. Recommendation is that all surfaces, elements, and materials be retained intact.

North Lounge

First Floor Main Corridor



Colonial Room

East Suite: Pine Lounge, Presidents Lounge, Art Gallery, and Associated Vestibule and Hall

These lounges are in good repair and retain much of their original material. The Pine Lounge and President's Lounge contain most of their oriental paneling and trim work. The Gallery has been repainted in an all-white, befitting its new use but contrary to the original darker paint at the walls. Carpeted floors cover original wood floors, although the floors were shown as carpeted in the earliest photos. The art gallery which had been the women's lounge originally had a darker painted walls to highlight the plaster ornament. Wood panels and trim remain in this room as well. The octagonal vestibule and entry to the art gallery should be retained. There are extant closets flanking this vestibule which had been used as phone closets. Doorways here should be maintained even if the closets are used for other purposes. Paint analysis should be undertaken to determine original finishes in these areas.

Stairways

There are two ornamental stairways in the original union. Both stairways have been reconfigured. At the east stair the entry to the stair on the first floor has been re-configured to allow north-south movement from the 1939 building into the enclosed courtyard. At the west stair the first flight of stairs has been re-configured to allow wider entry into the north building. In both cases the stair appears intact and any modifications were done and a sensitive matter.
Recommendations: The stairway walls treads handrails and guard rails are of significant interest and should be maintained in their current configuration. If modifications are required for code or circulation purposes, any modifications should be done per the precedent and to standard already established with these extant modifications.

The Vending Room

The vending room was not treated as ornately has other first floor spaces. Remaining original material include some wood paneling, wood windows and trim, doors, and perhaps original parquet floor.
We recommend that all original material and services be retained.



Pine Lounge


President's Lounge


Art Gallery


The Vending Room

Historic Preservation Analysis

Second Floor: 1939 Faculty Lounge and Meeting Rooms
At the West Wing of the second floor is the original faculty lounge and associated rooms. These spaces are currently used for student organizations and clubs. The faculty lounge is a large elegantly proportioned room which retains most of its original features and character. These include wood paneling, wood trim, large windows, and an elaborate fireplace at the east wall. This should be retained. The meeting room at the southwest corner is intact and should be retained. The larger meeting room at this northwest corner of the suite has been divided into two smaller offices. All historic material on original walls and partitions remains however. We recommend that the new plan should retain the faculty lounge and the two meeting rooms. The spaces may be divided into smaller meeting rooms if needed, but the original character in size of the overall room should be maintained.

West Hall at Faculty Lounge
The west hall serves as the entrance to the renovated administration area and the student organization area. The west hall has a beautiful groin vault at the ceiling plaster ceiling, this element should be maintained The walls and their configuration including doorways, openings, and overall portion should be maintained.

The Ballroom
The ballroom is an elegant two-story space on the east side of the plan. All elements that exist here should be retained and refurbished. Elements include the wood parquet floor, plaster ornament, wood trim and details, and windows, trim, and doors.

Second Floor Corridors
The corridors at the second floor including the east lobby in the west lobby retain their original configuration proportion and materials, they should be retained.

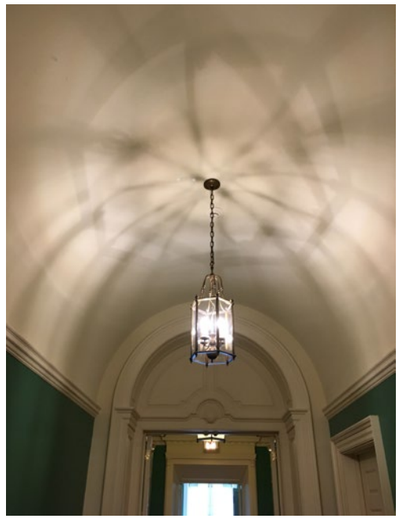
Second Floor General Lounge
The general lounge retains its original configuration including the fireplace and wood trim, wall panels and trim, and original windows. These elements should be retained and reused in a new scheme.

Third Floor
The third floor east lobby and west lobby retain some historical elements including their general historic configuration, door opening trim, floors, and ceiling. These should be maintained.

Third Floor Banquet Rooms and Lounges
This floor contains a large banquet room which can be divided by closing doors and creating a center passage. Elements such as the wood trim, window detail, and fireplaces should be maintained. The small lounge room at the West side should be maintained. Significant material includes wood trim and fireplace ornament.

Fourth Floor Corridor, and West and East Lobby
The general configuration, and ornamental treatments at door openings and ceiling should be retained.

Floor Four: Small Offices
This floor was dominated by guestrooms the date from the use of the space as a hotel. These rooms have been modified for use as office and meeting rooms. Extant historic material includes the windows and surrounding wood trim. These elements should be retained.



Groin Vault

The Ballroom

1960 Addition

Exterior Elevations and Elements

This building is considered in two parts: the multistory south building, the mass of which mimics the 1939 building, and the two corridors which sit to the east and west side of the (now interior) courtyard space. The south, west and north elevations of the main part of the building are of primary significance. Like the 1939 building, these elevations are well maintained. The east elevation is not significant: this brick wall was left bare in anticipation of a future addition to complete the south 1960 building. It could be modified per preservation guidelines, such as maintain the ratio of wall to window that is seen in other facades.

The south elevation of the 1960 building is its primary facade. If presides over the north side of the University quad. All elements visible from the quad are considered of historic importance. This includes the terrace, the three bow windows at the first floor, the smaller balcony on the second floor, all windows and door openings, the roof, the dormers, and the cupola. The red brick masonry, stone courses and ornament, and the double hung windows continue along the west elevation and wrap this part of the building on the north. These are the primary significant sides of this building. The north side of the building at the second and third floors are also a primary historic importance. The east elevation of the 1960 building is a tall bare masonry wall. The building was to be extended in this area to mimic the 1939 buildings footprint. As the addition was never realized, this façade has never been altered. This is not considered a historic primary façade. Two corridors connect the 1939 and 1960 unions and define the now-enclosed courtyard. The east elevation of the east corridor has been modified via the addition of two new entry doors and an ADA ramp. The west elevation of the west corridor “arm” is intact, although the outdoor terrace has been modified. These are secondary elements on the façade.

Recommendations

All elements on the façade of the building must be maintained and preserved, with the exception of the east blank masonry wall. Modifications to this wall may be considered if they are completed in the spirit of the design of the 1960 building. Punched openings maybe added that do not exceed the size and ratio of other punched openings elsewhere.

Stairwells

The twin stairwells of the 1960 addition are of primary historic importance. Protected elements include the floors, walls, plaster ornament, doors, handrails and guard rails, and the terrazzo stairs themselves. These elements should be retained and restored in the new design.

South Lounge

The sound lounge functions as the main student area overlooking the north side of the quad. It retains most of its original character and detail, including wood paneled walls, ornament, three bow windows, and six columns with fine wood detail and paneling. All elements within this space should be retained.

The South Terrace

The South Lounge

Landscape Design

Landscape Design

Overview
The concept plan for site development of the renovated Illini Union includes: realigned pedestrian walkways, expansion of the existing outdoor terraces, site features and furnishings, trees and planting beds, vehicular access for service, and parking.

Pedestrian Walkways
Most people using the Illini Union will be pedestrians walking from surrounding campus areas. The two major pedestrian corridors leading to the Union are on the south “quadrangle” side and on the west “Altgeld Hall” side. Along the south quadrangle side, the sidewalk would essentially remain the same. A new paved area is proposed along the south side of that sidewalk to accommodate additional users. It would back onto the existing seat wall. Its visual connection to the upper terrace would be made with common pavement and other detailing.

On the west Altgeld Hall side, steps and ramps from the re-configured upper terrace lead to new sidewalks below. The new curved configuration allows for smooth movement and access to the many building entrances in the area. Ramps and step provide for the 18” differential in grade between the terrace and sidewalk levels.

Outdoor Terraces
The existing terrace on the south side of the Union would be expanded to provide more area for dining, studying, and gathering. Reconfigured ramps and steps provide for the 18” differential in elevation between the terrace and ground level. The existing terrace would be expanded to the west, wrapping around the building to provided additional outdoor area.

Tables and chairs, some perhaps with umbrellas, will provide comfortable seating that overlooks the campus landscape. A seat wall along the terrace provides seating at the ground level. The wall also functions as a retaining wall for the terrace and supports a six-foot wide strip of plant material providing visual interest and barrier from the area above.

Also on the west side, the venerable statue and fountain of Diana would be moved to the west. Here, it would be visible and appreciated by all who are walking through or gathered in the public spaces provided.

Campus Furnishings
Bicycle parking will be provided at the northwest, southwest, and southeast corners of the union. The northwest bike parking is within close proximity to the Green Street bike path and the bike parking proposed for the north entry project. Seventy total bicycle racks are proposed at these locations. The existing bicycle parking at the southwest corner of the building has approximately forty bicycle racks. Tables and chairs, some perhaps with umbrellas, will provide comfortable seating for students, visitors, and faculty on the Union terrace. Ample trash receptacles will be located near building entrances and around the terraces.

On the east side of the building, a new terrace area is proposed that could incorporate a fire bowl, shade sail, and a video screen wall. Trees in planters would add interest and shade, all-in-all creating an exciting and attractive space in the niche left on the east side of the building

Green Space
Green space on the site will be planted with trees, shrubs, perennials, and turf grass to create an attractive site. The green areas will allow storm water infiltration and site drainage. The plant beds between the upper terraces and campus sidewalks will soften the expansive pavement and contribute to the quality of the campus landscape. Existing trees will be preserved to provide shade and visually reduce the scale of the large campus structures.

Access for Underground Parking, Delivery and Service
The east “Natural History Building” side of the Union would be improved for service access. If the underground parking option becomes part of the design then a parking ramp will provide access to the proposed underground parking. A loading dock on the east side of the building will be improved to accommodate deliveries. Note: The vehicular and pedestrian access on the north side of the Illini Union is being improved under the MCORE project scheduled for construction in 2017.

Landscape Design

Option A and B Comparison

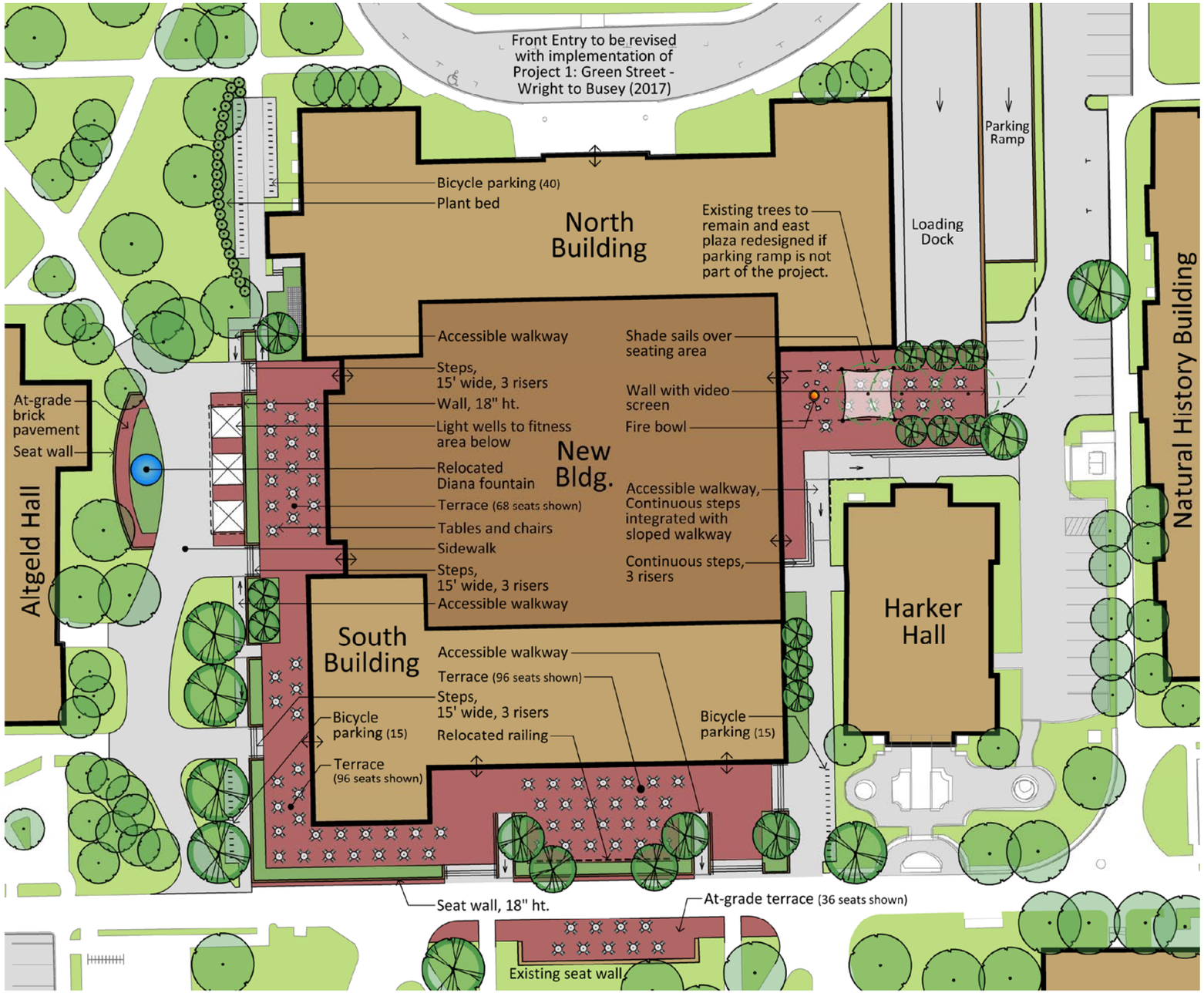
The design differences between Option A and Option B are located at the south terrace, the area between the Union and Harker Hall, and near the Diana fountain on the west side of the Illini Union.

At the south terrace, Option A shows the existing stone railing relocated and the terrace pavement extended south to accommodate additional tables and chairs at the building floor level. The steps and ramps allow pedestrian movement in the north/south direction between the Union and the Quad. In Option B, the existing railing remains and several tables and chairs are positioned at the quad level under the canopy of two existing trees. New ramps oriented east/west are located just south of the railing and wide steps are added to allow movement between the upper and lower terraces.

The sidewalk between the Union and Harker Hall is at the quad elevation in Option A, while in Option B an elevated terrace wraps around the east side of the building. This elevated terrace is connected to the lower sidewalk by a continuous, broad stairway. Five additional bicycle racks and more green space along the east side of the building are indicated in Option A.

At the Diana fountain, Option B indicates brick pavement crossing the main concrete sidewalk to visually unify the fountain and sitting wall to the Union terrace.

Option A
One-Level Expanded South Terrace



MMA MassieMassie+Associates

Graphic Scale
0' 25' 50'

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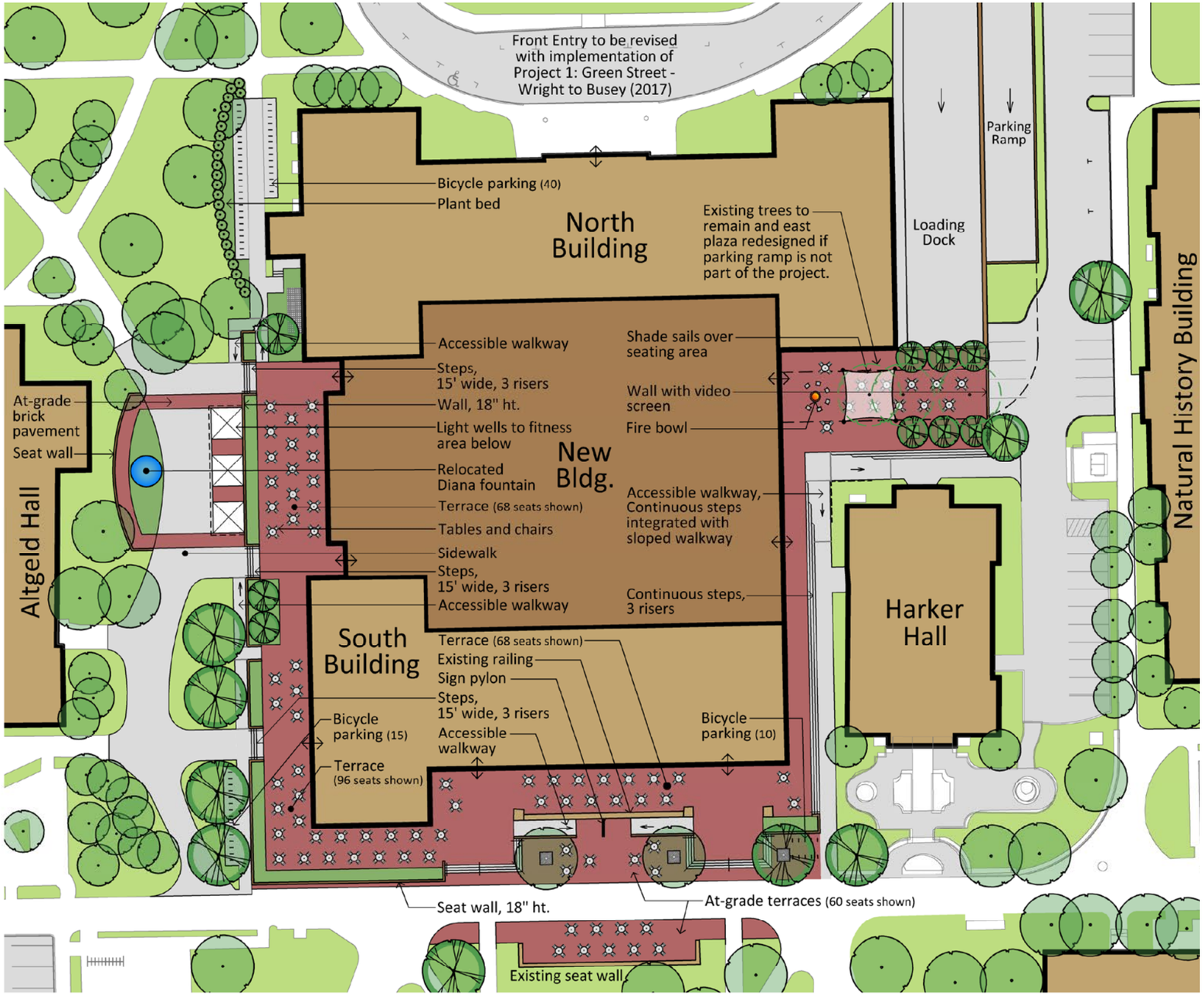
Landscape Design

Option B
Two-Level Expanded South Terrace



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Graphic Scale
0' 25' 50'

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Civil Engineering Analysis and Design

Civil Engineering Analysis and Design

1.1 New Loading Dock Facility

As desired by the University, the loading docks on the east side of the Union will be replaced and upgraded to accommodate additional deliveries, as well as over the road trucks. The dock will be below grade, at the basement level, providing direct access to the food preparatory and storage areas. The suggested site plan provides the width required to allow simultaneous loading/unloading of three trucks. The existing parking lot, north of the Natural History Building, will need to be extended east to allow for the truck maneuvering in to the dock. The additional parking spaces will help offset parking spaces that will be removed to accommodate the new loading dock expansion.

1.2 Underground Parking

The University has requested the study to include underground parking, underneath the proposed infill addition to the Illini Union below the basement level. It should be noted that the entirety of the parking facility will be located below the natural groundwater table. A perimeter waterproofing system, such as a Slurry Wall will be required, as well as a back-up pumping system, to maintain a dry facility, extending, approximately 60' below grade into the stiff clay below. Additional information can be found in the structural section of this report.

The entrance to the parking structure is planned to be located on the east side union. The entrance will traverse parallel to the loading docks, down to the parking decks below the basement. It should be noted that an existing tunnel vent is located at the northeast end of the current Union dock ramp. This structure will need to be relocated and incorporated into the new ramp/ driveway retaining walls. There is also a section of existing steam tunnel that runs east-west at the north end of the loading docks/parking garage ramps. The exact elevation of the tunnel will need to be surveyed during design to maintain adequate cover over the top. The length of the ramps on the concept plans take into account a flatter entrance slope over the tunnels, to maintain cover. The subject area currently contains a small parking lot and plaza area. There are also several utility services in the area that will need to be relocated. These include sanitary, storm, potable water and natural gas.

This proposal includes three options that address the loading dock and parking. In all options the existing parking lot and drive aisles adjacent to the parking entrance will be reconstructed to realign the driveway and replace parking stalls. Option 1 would redesign the loading dock and add a ramp to new underground parking.

Option 2 has been provided to expand the loading lock an additional 10' to the east. The expanded dock would push the parking entrance ramp east and in conflict with a recently constructed steam tunnel. The tunnel would need to be relocated and has been accounted for in one of the cost estimate options. Option 3 would include an expanded loading dock but it would not include the underground parking option and associated parking ramp.

1.3 Site Utilities

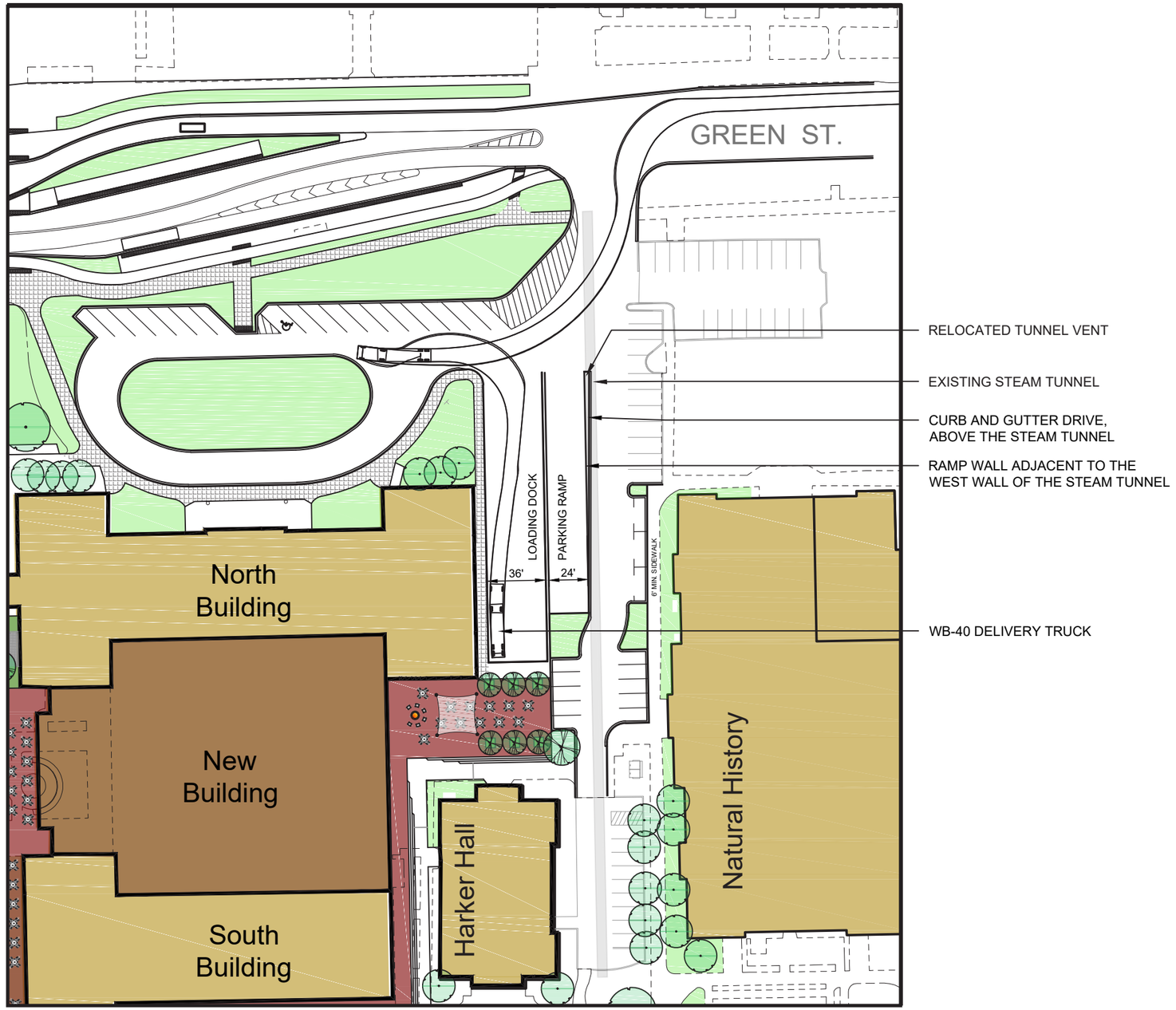
During the building renovation, it is highly recommended to replace and upgrade the aging building "wet" utility services. Existing water, sanitary and storm mains are available in the project vicinity. As the building MEP facilities are developed during the design, new services can be connected to the adjacent mains around the facility.

1.4 Stormwater Management

The proposed improvements will not significantly impact the overall amount of impervious surfaces within the project area. Therefore, stormwater detention, per Facilities & Standards requirements, will not be required. However, LEED accreditation may require the points provided for stormwater management to obtain the desired certification. The project area does not have any large open spaces, so it must be assumed that the storage would be below grade in oversized pipes or a concrete vault.

Loading Dock Option 1

New Loading Dock and Parking Ramp
(Underground Parking Option Included)



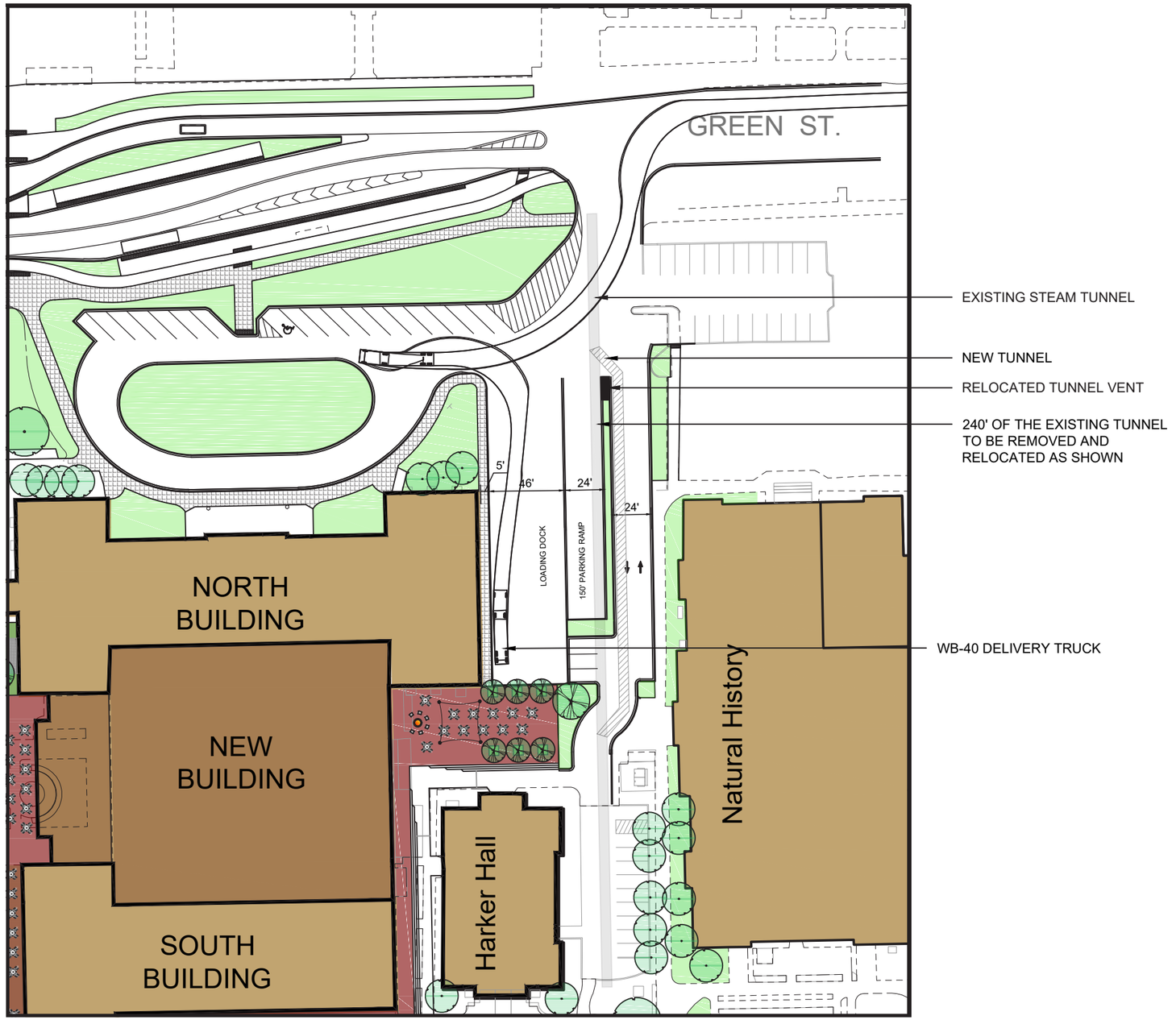
RME Rubinos & Mesia Engineers, Inc.
200 S. Michigan Avenue, Suite 1500, Chicago, IL 60604-2482

0' 50 100 150

Civil Engineering Analysis and Design

Loading Dock Option 2

Expanded Loading dock and Parking Ramp
(Underground Parking Option Included)



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Loading Dock Option 3

Expanded Loading Dock
(Underground Parking Option Not Included)

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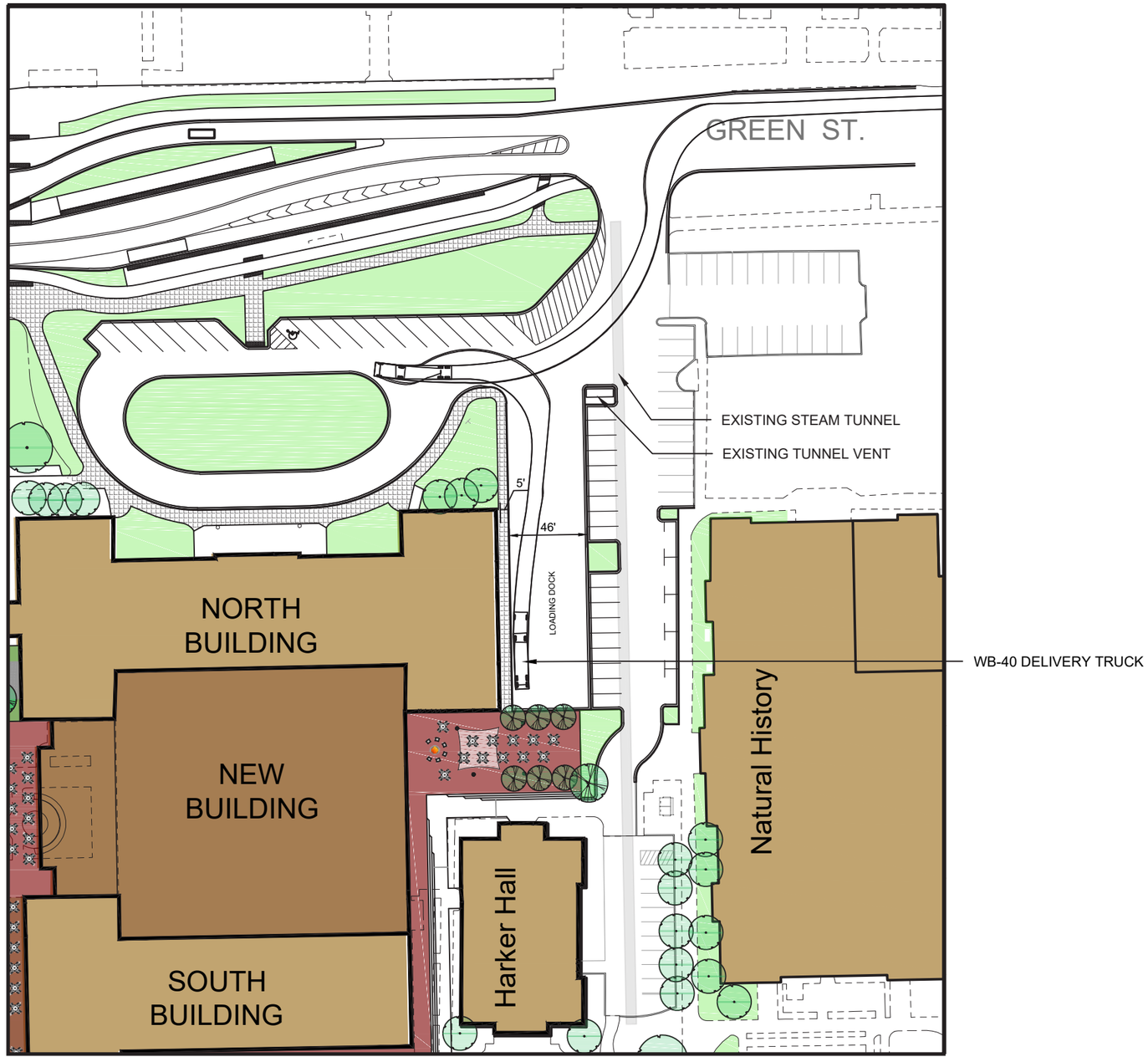

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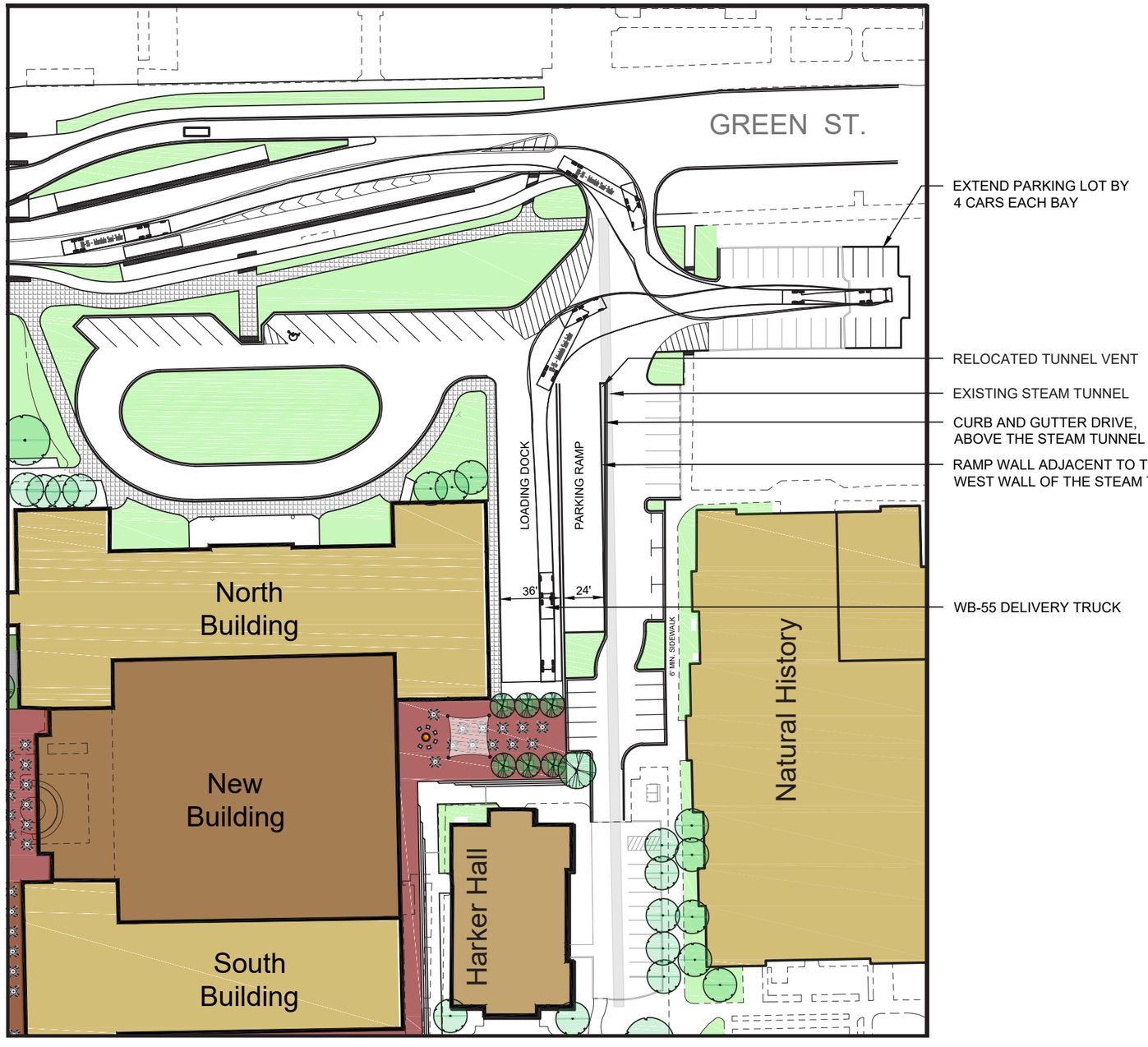
Civil Engineering Analysis and Design

Large Delivery Truck Reference Plan

This plan is for reference only to show how a full size semi delivery truck (WB-55) would back into the loading dock. That size of a truck would require the extension of the parking lot to the north of the Natural History building or the truck would need to back in from Green Street.



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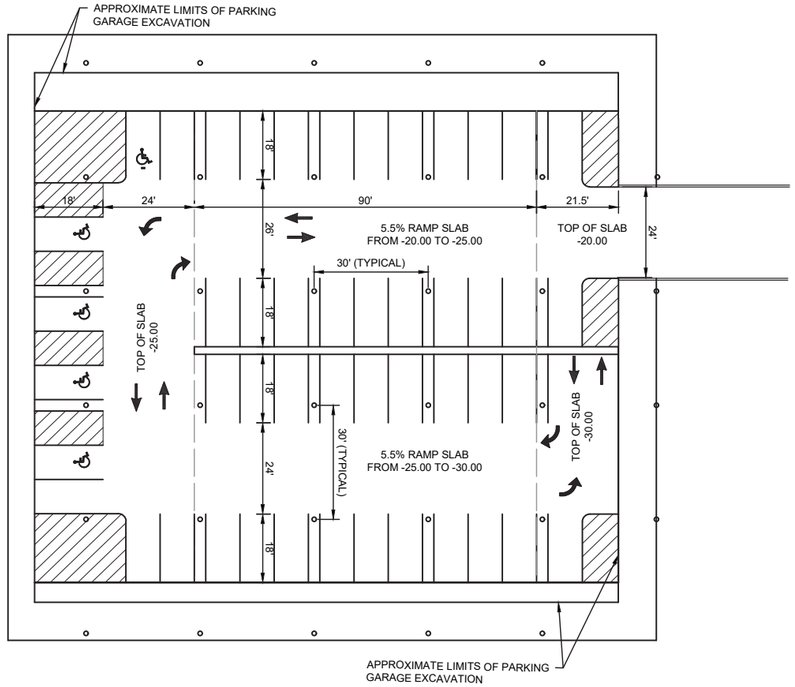
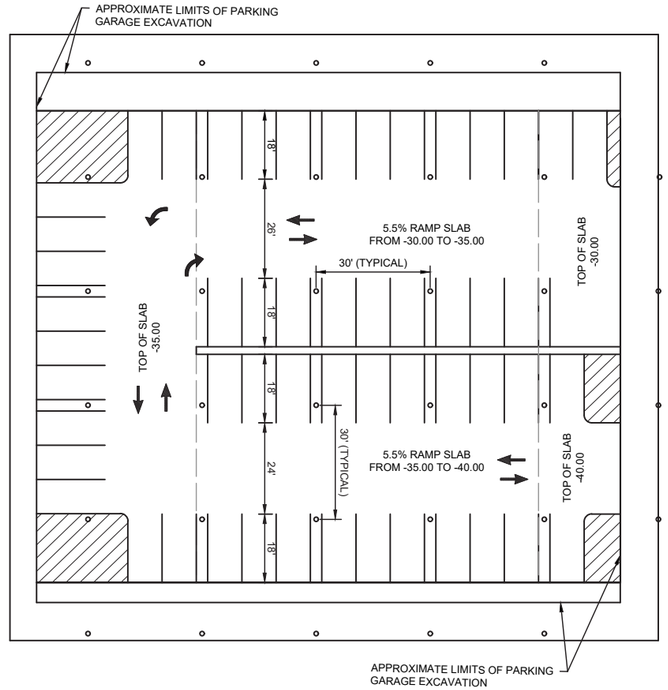
Underground Parking Option

Two Level Option



48 PARKING STALLS AT 1ST. BASEMENT LEVEL

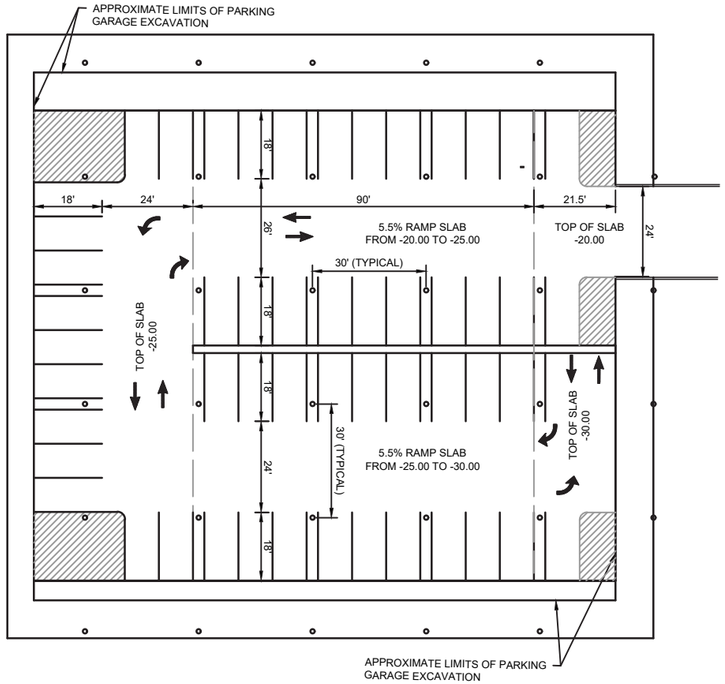


53 PARKING STALLS AT 2ND. BASEMENT LEVEL

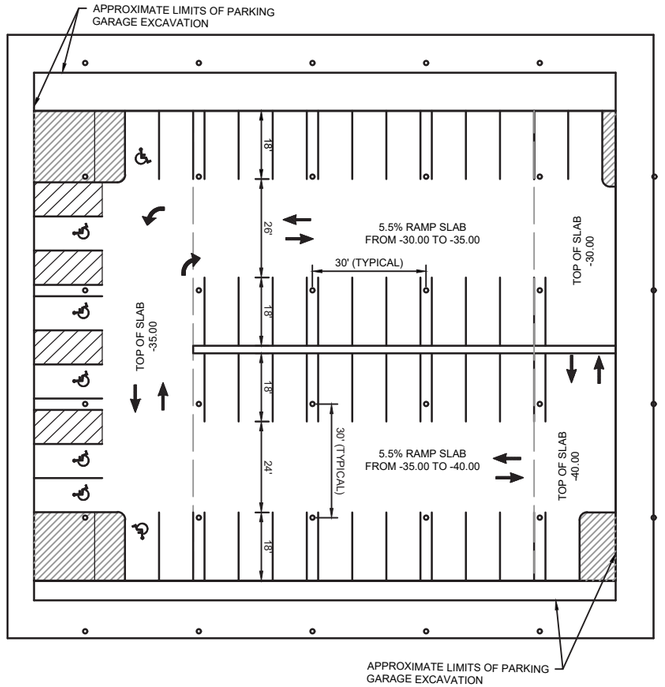
Civil Engineering Analysis and Design

Underground Parking Option

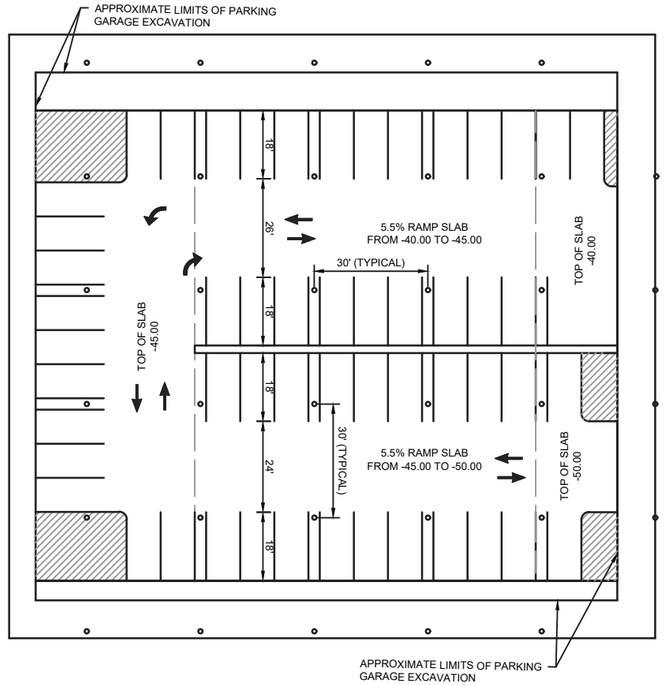
Three Level Option



48 PARKING STALLS AT 1ST. BASEMENT LEVEL



52 PARKING STALLS AT 2ND. BASEMENT LEVEL



53 PARKING STALLS AT 3RD. BASEMENT LEVEL

Structural Engineering Analysis

Structural Engineering Analy-

1.1 Scope

The proposed plan to remove the central portion of the Union (including basement) and infill with a new structure will detach the buildings structurally (using expansion joints) into potentially 2 or 3 separate buildings pending a full analysis. This study also includes options for 2 or 3 levels of a parking structure below the basement of the new central infill.

1.2 Existing Building Information:

Though constructed at different times the North end and South end of the Illini Union are structurally connected. The following drawing sets for both ends of the building were made available by the University:

- North Building drawings by Howard Lovewell Cheney Consulting Architect dated May 6th, 1939.
- South Building Addition drawings by Jameson and Harrison Associate Architects dated August 12, 1960.

The North Building existing structure is a concrete frame. The framing consists of concrete columns, beams, joists and slab. The foundations on the north end are shallow foundations consisting of spread and continuous footings. The South structure consists of a structural steel frame utilizing wide-flange steel beams with a concrete slab, steel columns and partial moment frames to resist lateral forces. The foundations are similar to the North structure and consist of spread and continuous footings. Both buildings have a basement.

1.3 Structural Challenges

Seismic:
A full Structural and Code analysis will be needed along with approval from the University of Illinois as the Governing Authority on the approach and assumptions made during design. Design team will need to ensure that the modified existing buildings meet the Seismic requirements in the International Building Code (IBC).

The original North and South end were designed for gravity and lateral loads. Based off the existing drawings, it appears only wind forces were included in the original design. Per the International Building Code both existing buildings will need to be evaluated for seismic forces. This analysis could indicate that seismic retrofitting is required. Out of the two ends there is higher probability that the South End would require retrofitting while the North End is unlikely. Potential seismic retrofitting could include addition of cross bracing at selected locations in the South building. This would also require the existing foundations at the new cross bracing locations to be enlarged and/or reinforced to support the additional loads from the bracing.

Parking Structure:
The two options for the parking structure (2 or 3 levels) below the basement also provide a set of challenges. To avoid undermining the existing buildings and to prevent additional differential settlement the majority of the existing perimeter footings will need to be underpinned with micropiles or other means prior to excavation. Once the footings are underpinned, an ERS system (e.g., slurry wall) would be installed for excavation. The ERS system provided will need to be embedded deep into hard clay (approximately 60 feet below grade minimum) to reduce the rate of infiltration of ground water. A Geotechnical engineer will provide final recommendation once a full geotechnical investigation is performed.

Existing Structure and New Programming
The existing drawings for the North and South end do not indicate the Live Loads that the buildings were designed for. The University Facilities Services document section titled “Structural Considerations” states:

Design live loads shall be 100-125 psf, minimum (Note that this is a more stringent requirement than what the International Building Code requires). Design loads should take into account the potential for future changes in facility usage so as to provide long-term flexibility. Changes of facility usage are a common occurrence at a University with ever-changing programs.

A structural analysis will be required to determine if the structure can support the required 100 psf. If the structure is not adequate, discussions with the University will be required to request a variance in the design guidelines. The variance could allow for the existing structure to be verified per the Live Load guidelines in the IBC and not the 100 psf per the University design standards. If the structure is not adequate for the approved loads then the structure may need to be reinforced. The reinforced structure would then have to be designed to meet the University’s 100 psf (Live Load) requirement.

1.4 New Building Superstructure

RME is proposing a structural steel system to be used on the new infill building at the Illini Union.

Structural Design Criteria Assumptions for New Building:

Gravity Loads
- Dead load per IBC
- Live Load: 100 psf per UIUC Design Standards

Lateral Loads
- Wind loads per IBC
- Seismic loads per IBC

Structure Description

Parking Structure Below Basement
- Bay size utilized for narrative: 30’x30’
- Concrete slab (size for cost: 5” thick)
- Concrete columns (size for cost: 24”x24”)
- Concrete beams (size for cost: 14”x20” at 10’-0” on center maximum)
- Concrete girders (size for cost: 18”x22”)

Basement + Super-Structure

Steel Structural System for Typical Elevated Floor (Basement through 3)
- Bay size utilized for narrative: 30’x30’
- Composite Metal Deck with Normal Weight Concrete
- Wide Flange Columns and Beams
- Weight for cost: 14 lbs/square foot (includes columns)

Steel Structural System for Roof At Existing 4th Floor Elevation
- Bay size utilized for narrative: 30’x30’
- Roof Metal Deck
- Steel Joists and wide flange columns
- Weight for cost: 8 lbs/square foot (includes columns)

Steel Structural System for Roof Above Illini Room (Penthouse Floor)
- Penthouse to be located over Illini Union Room so loads to be used will have a live load of 150 PSF
- Structure may utilize transfer system due to columns found in the Pent house
- Bay Size utilized for narrative: 30’x90’ (steel members will span 90’)
- Composite Metal Deck with Normal Weight Concrete
- 6 to 8 feet deep steel trusses
- Weight for cost: 25 lbs/square foot (includes columns)

Lateral Force Resisting System
- Multiple cross bracing will be provided in a coordinated location at each level and in each direction. Depending on how the buildings are separated (into 2 or 3 separate buildings) the bracing in the new infill could be designed to support the lateral loads applied to the south end and thus no retrofitting would be required as discussed above.

1.5 New Building Foundations

For the option with no parking deck below the basement the foundations for the new infill will be spread and continuous footings similar to the existing foundations. Geotechnical engineer will provide final recommendation once a full geotechnical investigation is performed.

1.6 Relocation of Existing Steam Tunnel

The option with the extended loading dock (see Mechanical & Civil section) will require relocation of an existing steam tunnel located on the east side of the Union. Current tunnel is approximately 18’ feet deep and will need to be rerouted around the proposed parking garage entrance drive.

MEP Engineering Analysis

MEP Engineering Analysis

Facility Assessment

A. Mechanical

1. **Utilities**

   a. Chilled water enters the building in the southwest corner of Mechanical Room #6. This location and the chilled water service should remain when the master plan revisions are implemented.

   b. Steam enters the building in the northeast side of Mechanical Room #6. This location and the steam service should remain when the master plan revisions are implemented.

   c. Domestic water enters the building in various locations as follows:
      1) Southwest corner at Mechanical Room #6. This location and domestic water service should remain when the master plan revisions are implemented.
      2) Northeast corner of the north building. This location will be have to be reviewed as part of the master plan revisions to confirm if it will be viable to remain.

   d. Sanitary exits the building at various locations as follows:
      1) Two locations at the north side of the north building.
      2) Three locations on the east side of the building.
      3) One location at the south side of the south building.
      4) All locations identified will be have to be reviewed as part of the master plan revisions to confirm if they will be viable to remain.

   e. Storm exits the building at various locations as follows:
      1) Three locations at the north side of the north building.
      2) One location on the east side of the building.
      3) One location on the southeast side of the south building.
      4) Six locations on the west side of the building at various locations.
      5) All locations identified will be have to be reviewed as part of the master plan revisions to confirm if they will be viable to remain.

   f. Natural gas enters the building on the east side at Mechanical Room #6.
      1) This location should remain when the master plan revisions are implemented.

2. **General Items**

   a. A majority of the existing facility has pneumatic controls.

   b. A complete DDC infrastructure upgrade project for the existing air handling equipment was completed in 2016, with upgrades to existing pneumatic controls. Work on this project is set to begin per the Illini Union onsite staff.
      1) Refer to 2016 Infrastructure plans for specifics.

   c. The ductwork distribution and terminal equipment was not reviewed in detail.
      1) In general, the terminal equipment was installed when each particular area was built, with some upgrade projects for each. The following is a summary by area, with recommendations for each.

         (a) North Building
            (1.) First, Second and Third Floors were partially updated, with some existing ductwork remaining, during the 2013 infrastructure upgrade. This area should be updated to the extent possible based on the new scope when building master plan revisions are implemented.
            (2.) Fourth Floor was entirely updated during the 2013 infrastructure upgrade. This area should be updated to the extent possible based on the new scope when the master plan revisions have been identified.

         (b) Center Building
            (1.) Basement and First Floor of this area has had various updates. The distribution and terminal equipment for these spaces should be removed and replaced when the master plan revisions are implemented.

         (c) South Building
            (1.) Basement, First, Second, Third and Fourth plans for the building have not had any significant upgrades. The distribution and terminal equipment for these spaces should be removed and replaced when the master plan

   d. Fire Protection
      1) The existing fire pump and associated equipment identified in Mechanical Room #6 below would be replaced as part of the master plan revisions, with the new equipment being installed in a dedicated fire pump room.
      2) In general, the facility should be completely updated with a new fire protection distribution system and zoning as part of the master plan revisions. Refer to the attached facility master plan narrative.

3. **HVAC**

a. The focus of this narrative is on all mechanical spaces within the facility listed below. References to distribution, terminal equipment, and other components outside these spaces have been addressed in the General Items section above.

b. Sub-basement Mechanical Room #6

1) AHU-17 is located in this space. The unit is a 12,000 CFM Airflow Equipment unit installed in 2012. It serves existing zones on the east side of First Floor and is makeup air for the north kitchen hoods. The unit is in very good condition and could be reused. Refer to Figure 1 below. Unit components are as follows:
   (a) Supply fan: 15 HP direct drive plenum type with variable frequency drive.
   (b) Return fan: 7.5 HP direct drive plenum type with variable frequency drive.
   (c) Chilled water cooling coil.
   (d) Hot water preheat heating coil with circulation pump P-3, 74 GPM, 20' head, 3/4 HP, 480V-3ph.
   (e) Outside air ducted up to a plenum connected to two louvers located in a recessed area well in Mechanical Room #1 directly above.
2) An Armstrong Model WS-1C4-2-2, 194 GPM steam-to-hot water heat exchanger is located adjacent to AHU-17. HE-1 provides 190° hot water to AHU-17 and coils served by this unit. HE-1 has a pneumatic control valve. The unit was installed in 2011, is in good condition and could be reused. Refer to Figure 2 below. The existing pneumatic devices need to be updated to full DDC control as part of the master plan updates.
3) There are two condensate return stations in the space:
   (a) Domestic, duplex model labeled as P-2, 155CC, 22.5 GPM, duplex condensate pump is located west of the heat exchanger. This unit appears to serving the steam mains from the tunnel.
   (b) MEPCO, A 1 HP duplex labeled CDP-1, 14 gallon receiver, 9 GPM, type CRYD840-2D, 8,000 EDR. This unit is serving the Armstrong heat exchanger noted above.
   (c) Both units appear to be newer and installed with AHU-17 in 2011 as noted above.
4) Heating water pumps P-1 and P-2: Duplex Aurora pumps provide heating water to AHU-17 and in the zones which it serves. Each is sized at 200 GPM, 35' head and is 480V-3ph.
5) The mechanical room and associated equipment is served by a Siemens APOGEE DDC control system, with the exception of HE-1, which is pneumatic as noted above. The pneumatic control would be updated to DDC control during the master plan updates.
6) There appears to be some abandoned steam equipment within the space. This should be removed during the master plan updates.
7) There is a duplex sewage ejector located east of AHU-17.

Figure 1. AHU-17 in Mechanical #6

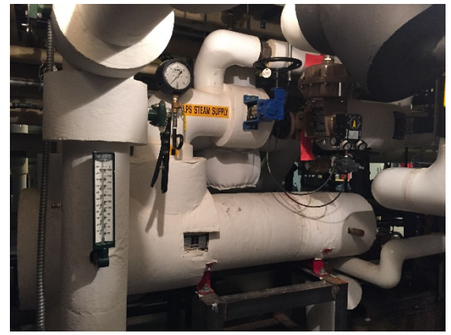


Figure 2. HE-1 in Mechanical #6

c. Mechanical Room 40C

1) AHU-21 is located in a crawl space room. Refer to Figure 3 below. The unit supply fan CFM and motor horsepower are unknown. The return fan is sized for 6,100 CFM, which should closely match the supply CFM. The return fan is remote to the AHU located in Mechanical Room 44 directly above Room 40C. Refer to Figure 4 below.
2) Outside air is provided through a louver located in a recessed area well.
3) Steam heating coil.
4) Chilled water cooling coil.
5) The unit has a Siemen's pneumatic control system. This system would be replaced during the facility master plan updates.
6) AHU-21 serves the northwest corner of the First Floor of the north building. The unit is in a very low crawl space. The age of the unit is well past its useful life and should be removed from the crawl space and replaced.

MEP Engineering Analysis

Figure 3. AHU-21 in Mechanical Room 40C

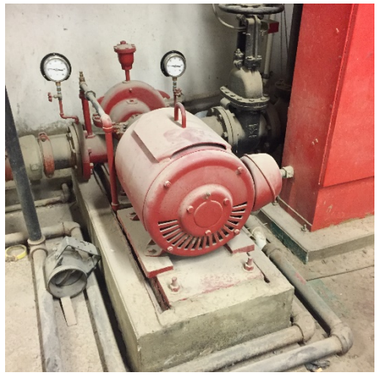
Figure 4. AHU-21 Return Fan in Mechanical Room 44

7) A storm pump is also located in the room adjacent to AHU-21.

d. Mechanical Room #88
   1) AHU-1
      (a) There was no CFM listed for this unit serving the main electrical room.
      (b) The unit was in decent condition, but we recommend it be replaced during the next HVAC upgrade.
   2) AHU-12
      (a) Listed as 12,700 CFM. Motor horsepower was not verified. Refer to Figure 5 below.
      (b) Outside air is provided via a louver located in the west area well.
      (c) Chilled water cooling coil.
      (d) Steam heating coil.
      (e) The unit has a Siemen's pneumatic control system. The control system should be removed during the master plan updates.
      (f) The unit is beyond its useful life and should be replaced.
   3) AHU-13
      (a) Listed as 20,000 CFM. Motor horsepower was not verified. Refer to Figure 5 below.
      (b) Outside air is provided via a louver located in the west area well.
      (c) The unit has a steam heating coil and a chilled water cooling coil, both being served from mains in the room.
      (d) The unit has a Siemen's pneumatic control system. The control system should be removed during the master plan updates.
      (e) The unit is beyond its useful life and should be replaced.
   4) AHU-14
      (a) Listed as 11,000 CFM. Motor horsepower was not verified.
      (b) Outside air is provided via a louver located in the west area well.
      (c) The unit has a steam heating coil and a chilled water cooling coil, both being served from mains in the room.
      (d) The unit has a Siemen's pneumatic control system. The control system should be removed during the master plan updates.
      (e) The unit is beyond its useful life and should be replaced.

Figure 5. AHU-14 and AHU-12 in Mechanical Room #6

   5) Fire Pump
      (a) The pump is a 1000 GPM, 75 HP Buffalo pump located in the southeast corner of the mechanical room. The fire pump controller sits adjacent to the pump. While the nameplate was visible, the installation date was not noted.
      (b) The unit appears to be in good working order but should be replaced as part of the master plan updates. Refer to Fire Protection summary above.
      (c) The unit is fed from the water service within the mechanical room.



6) Domestic Hot Water Heaters
   (a) WH-1 and WH-2: Redundant Thrush steam-to-hot water heaters, 55 GPM heating the water from 45° to 140°, 1,980 MBH @ 2,063 #/hr., Model DSVE842-5. Refer to Figure 6 below.
      - Each are located in the southeast portion of the room.
   (b) DCP-1 and DCP-2: Domestic water circulation pump, 12 GPM, 20' head, 1/6 HP, 120V-1ph.
   (c) A central mixing valve is located at the water heaters. 5 GPM minimum circulation, 41 GPM maximum.
      - The unit provides 140° hot water to several areas, as well as 115° hot water. Several areas use mixing valves at the device.
   (d) DHWT-1 and DHWT-2: The water heaters provide hot water to two 180-gallon AO Smith, TJV-180, domestic water storage tanks. Refer to Figure 6 below.
      - WH-1, WH-2, and the associated storage tank are the hot water source for the building.
   (e) CR-1: The water heaters have a dedicated MEPCO duplex condensate return station. 15,000 EDR, 21 gallon receiver, 1/2 HP @ 3,450 RPM.
   (f) All domestic water heating equipment and associated equipment were installed in 2013, are in good working order and should be reused.

Figure 6. WH-1, WH-2, DWHT-1, and DHWT-2

7) Air Compressor
   (a) A Quincy control air compressor, 15 HP, Model QRL50T-3BS00010, is located north of the domestic water heaters. The year of installation was not listed on the compressor. There appears to be two storage tanks adjacent to the compressor for additional storage capacity. This compressor and storage tanks are newer and in good condition. These could remain functional for general air to the facility when the pneumatic control system is removed when the master plan updates occur. Refer to left photo of Figure 7 below.
   (b) There is an additional Curtis air compressor and air dryer on the south wall of the mechanical room. The year of installation or sizing information was not listed on the compressor. This unit appears to be just a general air compressor and is also in good condition. Refer to right photo in Figure 7 below.

Figure 7. Mechanical #6 Air Compressors

MEP Engineering Analysis

e. Mechanical Room #44
   1) Steam-to-hot water heat exchanger HE-1 that serves Study Room 40 and Conference Room 53 is located in this room. There is no visible nameplate on the unit. A flash tank is located directly below HE-1. Refer to Figure 8 below.
   2) Two redundant Aurora 1.25 x 1.5 x 7 heating water distribution pumps are adjacent to the heat exchanger. Each are sized at 27 GPM and 38' head. Refer to Figure 8 below.
   3) This room also houses the return fan serving AHU-21 located in Mechanical Room 40C as noted and shown in item C above.

Figure 8. Mechanical Room 44 HE-1 and Pumps

f. Northeast Mechanical Room #1
   1) AHU-16 is located in this space. The unit is a 15,350 CFM Airflow Equipment unit installed in 2012. It serves existing zones on the east side of First Floor and is makeup air for the north dining hoods. Unit components are as follows:
      (a) Supply fan: 20 HP direct drive plenum type with variable frequency drive.
      (b) Common return fan with AHU-17: 7.5 HP direct drive plenum type with variable frequency drive.
      (c) Chilled water cooling coil.
      (d) Hot water preheat heating coil with a circulation pump P-4, 120 GPM, 20' head, 1.5 HP, 480V-3ph.
      (e) Outside air ducted up to a plenum connected to two louvers located in a recessed area well south of the unit.
      (f) The unit is in very good condition and could be reused.
   2) Restroom steam-to-hot water heat exchanger, Aerco Model SWIB07. This unit was installed in 1980 and is nearing the end of its useful life. Refer to Figure 9 below.
   3) Dishwasher steam-to-hot water heat exchanger, Aerco Model SW1A08. This unit was also installed in 1980 and is nearing the end of its useful life. Refer to Figure 9 below.
   4) There is a Quincy control air compressor located in the space. There was no information noted on the tank. It appears to be of the same age as the adjacent water heaters. It appears to be in good working order but can likely be removed when the pneumatic controls are removed.
   5) Cooling for the space is provided by ACU-3, a 1,200 CFM ceiling-mounted fan coil unit with a chilled water cooling coil.

Figure 9. Mechanical Room #1 Heat Exchangers

g. Mechanical Room M180
   1) AHU-4, AHU-5, AHU-6, AHU-7, AHU-8, AHU-9, and AHU-10
      (a) All units are located in the Mezzanine space. These units serve the Illini rooms and surrounding spaces. This mezzanine space is very tight both in floor footprint space and height of the space. Access to the space is via a narrow ships ladder-type stair from the First Floor west corridor.
      (b) The following units have a separate remote return fan: AHU-4,

AHU-6, AHU-7, AHU-8, AHU-9, and AHU-10.

(c) All units have American Standard supply and return fans.
(d) Chilled water cooling coils.
(e) Steam heating coils.
(f) Pneumatic controls.
(g) Note: There is a Siemens DDC controller at the top of the stairs that must be for new equipment that has been replaced. This would be replaced during the master plan updates.

2) All units noted above are original equipment, beyond their useful life, and should be replaced.
3) There is a fire protection main and zone valve located at the top of the Mezzanine stairs. This would be replaced during the master plan updates.

h. Mechanical Room M181

1) All units are located in a very narrow mechanical penthouse. Access to the roof is from an internal stair tower, with a walkway out to the roof adjacent to the mechanical room.
2) Access to each unit is via an entrance door at each unit, but one can get from one unit to the other from the penthouse.
3) Access to each component is very poor.
4) Each unit serves the First Floor space directly below the Penthouse.
5) AHU-1, AHU-2, and AHU-3
   (a) Carrier modular type unit, no information on the unit size.
   (b) A separate remote in-line box type return fan in the space.
   (c) Chilled water cooling coil.
   (d) Steam heating coil.
   (e) Pneumatic controls.
   (f) Outside air and relief air is via louvers on the exterior of the penthouse. Refer to photo below.
   (g) Steam and chilled water are supplied up through the mechanical room floor from the level below.
   (h) Refer to Figure 10 below.
6) While the units are not quite beyond their useful life from an age standpoint, the location, poor quality of the packaged equipment, and poor access to each both from the exterior and inside the mechanical penthouse would indicate they should be replaced. Refer to photo below.
7) The penthouse has steam unit heaters for space heating in the winter and prop exhaust fans for ventilating the space in the summer. Refer photo below. Refer to Figure 11 below.

Figure 10. Mechanical Room 180 - AHU-3

Figure 11. Exterior or Mechanical Room 180

i. Mechanical Room 400

1) AHU-18 is located in this space. The unit is a 41,525 CFM Ventrol unit installed in 2012. It serves existing north building zones. Unit components are as follows: Refer to Figure 12 below.
   (a) Supply fan: A fan wall system was used, and the plenum is broken up into an east and west section. Refer to Figure 12 below.
      - The west section has four 15 HP belt drive plenum type fans, each with external variable frequency drives.
      - The east section has four 15 HP belt drive plenum type fans, each with external variable frequency drives.
      - Refer to racked VFD photo below.
   (b) Return fan: A fan wall system was also used for return, and the plenum is broken up into an east and west section as well. Refer to return fan section photo below.
      - The west section has four 5 HP belt drive plenum fans, each with external variable frequency drives.
      - The east section has four 5 HP belt drive plenum fans, each with external variable frequency drives.
      - Independent chilled water cooling coils for each section.

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(c) Independent hot water heating coils.
(d) Outside air is ducted via a plenum that encloses louvers located within windows at the building dormers. Refer to outside air plenum photo below.
(e) Relief air discharges into the mechanical room and also is exhausted via relief louvers out of the mechanical room. Refer to Figure 13 below
(f) Outside air: 8,460 CFM. Refer to Figure 13 below.
(g) A Siemens DDC control system serves AHU-18 and associated equipment.
(h) Since the unit was installed new in 2012 and is in very good condition, it should be reused.

Figure 12. AHU-18 Fan Section and VFD Rack

Figure 13. AHU-18 Outside Air and Relief Duct

2) AHU-19 is located in this space. The unit is a 20,000 CFM Ventrol unit installed in 2012. It serves the Ballroom. Refer to Figure 14 below.
   (a) The west section has nine 5 HP belt drive plenum type fans, each with external variable frequency drives.
   (b) The east section has four 15 HP belt drive plenum type fans, each with external variable frequency drives.
   (c) Refer to supply fan section and VFD rack shown below. Refer to Figure 15 below.
   (d) Return fan: A fan wall system was also used for return.
   (e) This section has four 3.5 HP belt drive plenum fans, each with external variable frequency drives.
   (f) Chilled water cooling coil.
   (g) Hot water heating reheat coil.
   (h) Outside air is ducted via a plenum that encloses louvers located within windows at the building dormers.
   (i) Relief air discharges into the mechanical room and also is exhausted via relief louvers out of the mechanical room. Refer to Figure 15 - relief louver to outdoor photo below.
   (j) Outside air: 4,130 CFM.
   (k) A Siemens DDC control system serves AHU-19 and associated equipment.
   (l) Since the unit was installed new in 2012 and is in very good condition, it should be reused.
3) HE-1
   (a) No visible label on the tube bundle. 222 GPM, 25% glycol, serving AHU-18 pre-heat coils.
4) HE-2
   (a) Bell & Gossett SU 8 4-2, 132 GPM, 1,325 MBH serving the Fourth Floor mechanical room air handling units and reheat coils.
5) HWP-1
   (a) These pumps are not labeled but serve HE-1.
   (b) Aurora pump(s) 3 x 4 x 9A, 222 GPM, 30’ head, 1750 RPM.
6) HWP-2, HWP-3
   (a) Bell & Gossett, 135 GPM, 50’ head, 1750 RPM.
   (b) Serving HE-2 and reheat loop. Pumps appear to have been sized for additional future terminal air boxes on Second and Third Floors.

7) All heat exchangers and heating water distribution pumps within the mechanical room are in good condition and should be reused to the extent possible.

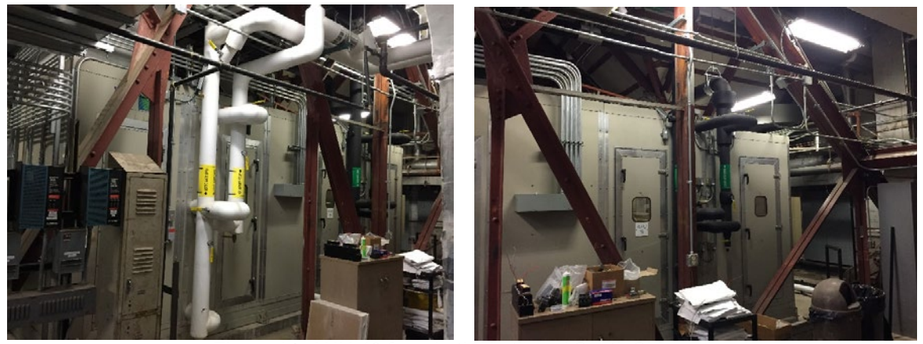

Figure 14. AHU-19 from both North and South Sides

Figure 15. AHU-19 VFD Rack and Relief Damper

j. Fire Protection
   1) New fire protection piping was installed in Mechanical Room 400 as part of the 2012 HVAC upgrade. This also included some new fire protection distribution piping on the Fourth Floor of the west wing. This piping should remain during facility master plan updates.

k. Mechanical Room 500
   1) AHU-1 is located on the west side of this mechanical room. The unit is a 6,260 CFM Buffalo unit installed in 1999. It serves the perimeter zones of the south building. Refer to Figure 16 below.
      (a) The supply fan size was not verified.
      (b) There is no return fan for this unit.
      (c) Chilled water cooling coil.
      (d) Steam preheat coil and steam reheat coil.
      (e) Outside air is ducted via a plenum that encloses louvers located within windows at the building dormers.
      (f) A Siemens APOGEE DDC control system serves AHU-1, AHU-2, and AHU-3 and associated equipment within the space.
      (g) Although the unit was installed new in 1999 and is in good condition, it should be replaced to the extent possible during the next HVAC upgrade at the building.
   2) AHU-2 is located in west central portion of this space. The unit is an 8,900 CFM Buffalo unit installed in 1999. It serves the main west wing corridor zones of the south building.
      (a) The supply fan size was not verified.
      (b) There is a separate return fan located in the mechanical space west of the stairs. Return duct is ducted across the stair tower to AHU-2. Refer to Figure 17 below.
      (c) Chilled water cooling coil.
      (d) Steam heating coil.
      (e) Outside air is ducted via a plenum that encloses louvers located within windows at the building dormers.
      (f) A Siemens APOGEE DDC control system serves AHU-1, AHU-2, and AHU-3 and associated equipment within the space.
      (g) Although the unit was installed new in 1999 and is in good condition, it should be replaced to the extent possible during the next HVAC upgrade at the building.

Figure 16. Mechanical Room 500 - AHU-1

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Figure 17. Mechanical Room 500 - AHU-2

3) AHU-3 is located in east portion of this space. The unit is a 16,982 CFM Buffalo unit installed in 1999. It serves south wing corridor zones of the south building and the stair towers. Refer Figure 18 photo below.
   (a) The supply fan size was not verified.
   (b) There is a separate return fan located in the mechanical space northwest of AHU-3. Refer to photo below.
   (c) Chilled water cooling coil.
   (d) Steam heating coil.
   (e) Outside air is ducted via a plenum that encloses louvers located within windows at the building dormers.
   (f) A Siemens APOGEE DDC control system serves AHU-1, AHU-2, and AHU-3 and associated equipment within the space.
   (g) Although the unit was installed new in 1999 and is in good condition, it should be replaced to the extent possible during the next HVAC upgrade at the building.

Figure 18. Mechanical Room 500 - AHU-3 and RF-3

l. FC-1
   1) A Baltimore air-cooled fluid cooler #5 is located on the northeast side of the mechanical room and serves the Kitchen. Refer to Figure 19 below.
   2) No further information could be found on the unit.
   3) The fluid cooler has a 5 HP, 8.5 F Series 80 circulation pump.
   4) The fan is controlled by a variable frequency drive.
   5) Although the unit appears to be installed near the same time as the adjacent air handling unit equipment and is in decent condition, it should be replaced to the extent possible with another cooling source during the next HVAC upgrade

Figure 19. Kitchen Fluid Cooler

m. HE-1
   1) Bell & Gossett, Model SU-104-2. No further information could be obtained. Refer to Figure 20 photo below.
   2) The heat exchanger was installed in 1961 and should be replaced.

n. HE-2
   1) Bell & Gossett, Model SU-104-2. No further information could be obtained.
   2) The heat exchanger was installed in 1961 and should be replaced.

o. HE-3
   1) Bell & Gossett, Model SU-86-2. No further information could be obtained.
   2) The heat exchanger was installed in 1961 and should be replaced.

p. Circulation Pumps
    1) The redundant circulation pumps associated with HE-1 had no visible equipment plate and no further information was available.
    2) HWP-18 is the circulation pump associated with HE-2; no further information was available. A new motor has been recently installed on this pump. Refer to Figure 20 pump photo below.
    3) The circulation pump associated with HE-3 had no visible equipment plate and no further information was available.
    4) All circulation pumps were installed in 1961, are beyond their useful life, and should be replaced.

q. Exhaust Fans
    1) EF-1 is located in the west portion of Mechanical Room 500I. The fan is an American Blower Size 182 and serves the west portion of the south building.
    2) EF-2 is located in the southwest portion of west Mechanical Room 500I. The fan is an American Standard Size 270 and serves the west portion of the south building.
    3) EF-3 is located in the east portion of the Mechanical Room 500 east of the stair and serves the southeast portion of the south building.

r. Heating for the mechanical room is provided by steam unit heaters located up high in the space. These units appear to be in good condition. These units would remain if steam remains at this mechanical room location during the next HVAC upgrade project. If the area is converted to hot water only, they would be replaced.

s. Exhaust for the mechanical room is provided via propeller fans in the space. These units appear to be in good condition and could remain for the next HVAC upgrade project.

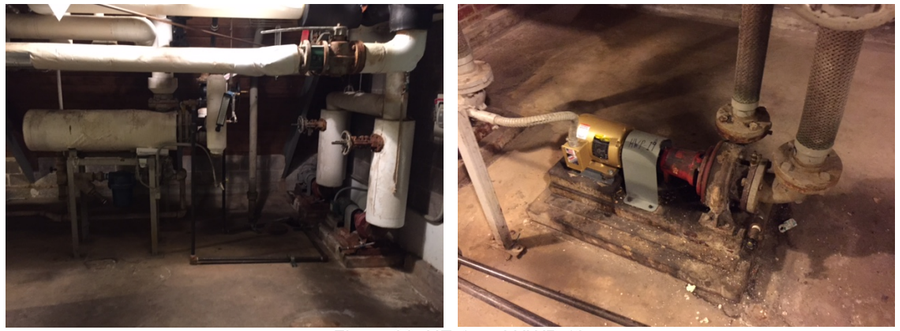

Figure 20. HE-1 and HWP-18

B. Electrical

1. **Electrical Service**

    a. There are three unit substations located inside the building: one in Lower Level Room 9 in the northeast portion of the building and two in Room 89 of the southwest portion of the building. The northeast substation is fed from existing 4160V Load Center #5-4 in Noyes Lab via a medium voltage switch located in Room 2 of the Illini Union, while the southwest unit substations are fed from existing 4160V Load Center #21-4.

    b. The northeast substation is a 1000/1333 KVA, 4160V to 277/480V unit substation with a 2000A/3P fused bolted pressure switch with ground fault protection. The bolted pressure switch is fused at 1800A. The substation was installed about 2012 and appears to be in excellent condition, with some spare space.

    c. The southwest substations are currently being replaced. The new substations will be as follows: one will be at 750 KVA, 4160V to 277/480V unit substation with 1600A/3P fused bolted pressure switch with ground fault protection. Bolted pressure switch will be fused at 1600A. The other substation will be at 750KVA, 4160V to 120/208V unit substation with a 2500A/3P bolted pressure switch. Bolt pressure switch will be fused at 2500A.

2. **Electrical Distribution**

    a. The northwest substation provides service to two transformers. One is a 500KVA, 480V to 120/208V 3-phase transformer that provides 120/208V, 3phase, 4-wire service to a 1600A distribution panel, which,

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in turn, provides 120/208V service to panelboards located in the north portion of the building. These panels provide 120V or 208V single phase service to receptacles, lights, and other electrical equipment requiring this type of service. The other transformer is a 300 KVA, 480V to 120/240V 3-phase transformer that provides 240V 3-phase service to outlets and electrical equipment requiring this type service. This distribution panel has a high leg for one phase to neutral. Lastly, the substation provides a 480V, 3-phase service to a distribution panel located in the Fourth Floor mechanical room. This distribution panel provides 480V, 3-phase service to the air handling units and pumps located in the room.

Northeast Substation

b. The southeast substations are currently being replaced with new unit substations. One substation will provide either 277/480V, 3-phase, 4-wire service to motor control centers, elevators, distribution panel, and show power for the south patio. The motor control center and the distribution panel provide 480V 3phase service to fans, pumps, and other electrical equipment requiring this type of service. The other provides 120/208V, 3-phase, 4-wire service to distribution and branch type panels. The distribution panels provide 102/208V, 3phase, 4-wire service to branch panels located in the south half of the Illini Union. These panels provide either 120V or 208V single phase service to receptacles, lights, and other equipment requiring this type service.

c. The distribution panels and branch panels are a mix of new and old panels. The old panels are out of date and need to be upgraded. The motor control centers are original equipment and need to be replaced with new.

MCC Southwest Basement

MCC Mezzanine Level

3. **Emergency Power**

a. Currently, there is a 275 KW, 277/480V, 3-phase diesel generator located in the basement of the Illini Union. This generator provides 480V, 3-phase service to the fire pump and 277/480V, 3-phase, 4-wire service to an emergency automatic transfer switch and an optional standby automatic transfer switch.

b. The emergency automatic transfer switch supplies power to a 75 KVA 3-phase transformer that steps the 480V, 3-phase power down to 120/208V, 3-phase, 4wire power. This transformer then provides service to a 200A, 120/208V panel, which, in turn, provides service to branch panels located throughout the building. These panels, in turn, provide 120V single phase power to lights and other equipment requiring this type emergency power.

c. The optional standby automatic transfer switch provides 480V 3-phase power to a 400A 3-phase distribution panel. This panel, in turn, provides 480V 3-phase power to step down transformers, sewage ejector pumps, and condensate pumps. The step down transformers step the 480V, 3-phase voltage down to 102/208V 3-phase. These transformers then provide 120/208V, 3-phase, 4-wire service to panels located throughout

the building. The panels, in turn, provide 120 or 208V single or 3-phase power to sump pumps and other electrical equipment that is on the optional standby system of emergency power.

d. The generator and some of the transformers and panels are original and need to be replaced. The automatic transfer switches and some of the panels and transformers are newer 2011 vintage and are in excellent condition.

Generator in Southwest Basement

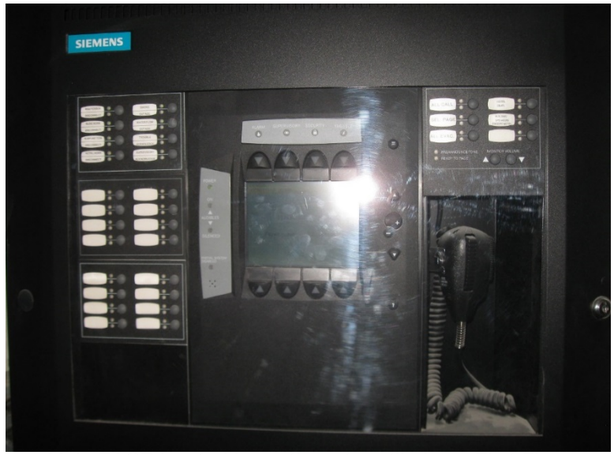
Automatic transfer switches in Room 89

4. **Lighting**

   a. The existing lighting is a mixture of LED, HID, fluorescent, and incandescent lighting. Exit lighting is a mixture of LED, fluorescent, and incandescent. Most fixtures appear to be in good shape. The incandescent and the HID should be replaced with more energy efficient and controllable LED lighting.

5. **Fire Alarm**

   a. The existing fire alarm panel is a Siemens Fire Finder XLS addressable panel with voice notification. The fire alarm is initiated via a smoke detector, pull station, heat detector, or duct smoke detector. Notification is given via a visual light, speaker, or combination speaker/visual light. It is connected to campus by the McCullough loop and telephone connections to the central fire alarm panel at the Campus Safety Building. The panel is obsolete but in good condition.



Main FACP located in southwest vestibule on First Floor

6. **Lightning Protection**

   a. The building has a lightning protection system that appears to be in good shape.

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Systems Narrative

A. General

1. **LEED Documentation**

   a. This project is planning to incorporate the Leadership in Energy and Environmental Design New Construction (LEED NC) standard. The following is a list of LEED credits the project could potentially target to help meet the UIUC LEED goals for the project:

      1) Sustainable Site
         (a) Credit 8 Light Pollution
      2) Water Efficiency
         (a) Prerequisite 1 Water Use Reduction – 20% Reduction
         (b) Credit 3 Water Use Reduction – 30% to 40% Reduction
      3) Energy and Atmosphere
         (a) Prerequisite 1 Fundamental Building Systems Commissioning
         (b) Prerequisite 2 Minimum Energy Performance
         (c) Prerequisite 3 Fundamental Refrigerant Management
         (d) Credit 1 Optimize Energy Performance
         (e) Credit 2 On-Site Renewable Energy
         (f) Credit 3 Enhanced Commissioning
         (g) Credit 4 Enhanced Refrigerant Management
         (h) Credit 5 Measurement and Verification

         Plan only; execution of plan, data monitoring, and other tasks required after project certification are by others

      4) Indoor Environmental Quality
         (a) Prerequisite 1 Minimum Indoor Air Quality (IAQ) Performance
         (b) Credit 1 Outdoor Air Delivery Monitoring
         (c) Credit 2 Increased Ventilation

         Will be evaluated during required energy modeling for feasibility

         (d) Credit 5 Indoor Chemical and Pollutant Source Control
         (e) Credit 6.1 Controllability of Systems – Lighting
         (f) Credit 6.2 Controllability of Systems – Thermal Comfort
         (g) Credit 7.1 Thermal Comfort – Design

B. Code Compliance

1. **International Building Code - 2009 Edition, except Section 510**
2. **International Fire Code - 2009**
3. **International Plumbing Code - 2009**
4. **Illinois Plumbing Code - 2014**
5. **International Mechanical Code - 2009**
6. **Illinois Energy Conservation Code - 2015**

C. Mechanical Demolition

1. **Ventilation**

   a. The following air handling units will be removed/replaced:
      (1.) AHU-1, AHU-2, AHU-3, AHU-4, AHU-5, AHU-6, AHU-7, AHU-8, AHU-9, AHU-10, AHU-12, AHU-13, AHU-14, and AHU-21.
         (a.) The distribution ductwork will be removed for all units being removed. This will include all terminal air boxes.
         (b.) For the units that will be reused, some selective distribution and terminal air boxes will be reused, but the majority will be removed.

   b. All existing exhaust fans and associated ductwork will be removed.

   c. The existing Fourth Floor South penthouse fluid cooler will be removed.

2. **Temperature Controls**

   a. All existing pneumatic controls and associated devices will be removed.

   b. Control panels installed during the 2016 DDC upgrade may remain and will be reused where possible.

3. **Heating**

   a. The following heat exchangers will be removed by area. This will include the associated distribution pumps, piping, and accessories.
      1) HE-1 located in Mechanical Room #6
      2) HE-1 located in Mechanical Room 44, including pumps P-1 and P-2.

3) HE-1 located in Mechanical Room 400, including the associated heating water pump.
4) HE-1, HE-2, and HE-3 located in Mechanical Room 500, including pumps P-18 and P-19.

b. All condensate return stations associated with equipment being removed.

c. All terminal heating equipment.

d. All steam baseboard radiators and associated branch piping.

e. All heating water distribution piping.
1) Note: Some selective heating water mains in Mechanical 400 and other may remain where it makes sense. This will be finalized during the design of each space.

f. All chilled water distribution piping.
1) Note: The chilled water service, mains, isolation valves, and associated controls in Mechanical Room #6 will remain where it makes sense. This will be finalized during the design of each space.

g. All steam distribution piping and accessories.
1) Note: Some selective steam mains in mechanical spaces may remain where it makes sense. This will be finalized during the design of each space.
2) The steam mains in the east sub-basement level tunnel can be removed if the parking garage alternate is accepted.

4. **Plumbing**

a. All domestic water distribution and circulation piping.
1) Note: Some selective mains in mechanical spaces may remain, specifically Mechanical Room #6, as all this domestic water heating plant will remain. This will be finalized during the design of each space.
2) The water service in Mechanical Room #6 and the north side of the building will remain.

b. Mechanical Room #1 dishwasher and restroom heat exchangers.

c. All plumbing fixtures.

5. **Fire Protection**

a. Fire pump and associated equipment.
(1.) Note: The water service in Mechanical Room #6 serving the existing fire pump will remain.

b. Distribution piping, associated sprinklers, and accessories.

D. General

1. Refer to Architectural master plans for the layouts of each floor referenced in the mechanical narrative listed below.

2. Refer to Mechanical sketches provided for specific equipment locations and zoning.

E. Mechanical Utilities

1. Refer to the Architectural master plan documents referenced within this narrative.

2. Chilled water enters the building in the southwest corner of existing Mechanical Room #6. This location will remain, as the area will remain as mechanical space when the master plan revisions are implemented.

3. A 10” campus pressure steam and 3” pump condensate enters the southwest corner of Mechanical Room #6. This entrance location and mains in the mechanical room will remain.

4. An 8” campus pressure steam, 2-1/2” high pressure steam, and 2-1/2” pumped condensate enters the building in the northeast side of existing Mechanical Room #6. This entrance location and mains will remain, as this area remains as mechanical space when the master plan revisions are implemented.

a. Revisions are being done in this area as part of the master plan for the addition of a parking garage; refer to Architectural plans.

b. Options are as follows:
1) Base Option
(a) This has the loading dock and entrance road to a below grade parking garage east of the Illini Union at the northeast corner. For this option, the westernmost north/south campus steam utility tunnel and abandoned utility piping will have to be

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demolished.

(b) KJWW discussed this concept with the UIUC utility group. It was determined that this was feasible, as the old brick arch tunnel has only a vacuum return line active in the tunnel. The last of the active utilities are being relocated as part of another project.

(c) The existing steam vent (refer to photo below) will be removed. A new steam vent will be installed. The new location will be directly above the north/south section of the easternmost tunnel to remain. The vent will be positioned between the loading dock and parking garage entrance road.

2) Alternate Plan 1

(a) This involves an expanded loading dock at the northeast and no parking garage entrance road.

(b) For this option, the westernmost north/south campus steam utility tunnel and abandoned utility piping will also have to be demolished as noted in the Base Option above.

(c) The existing steam vent (refer to photo below) will be removed. A new steam vent will be installed. The new location will be directly above the north/south section of the easternmost tunnel to remain. The vent will be positioned east of the loading dock.

3) Alternate Plan 2

(a) Expanded loading dock including a parking entrance road to a below-grade parking garage.

(b) For this option, the westernmost north/south campus steam utility tunnel and abandoned utility piping will also have to be demolished as noted in the Base Option above.

(c) The existing steam vent (refer to Figure 1 photo of steam vent below) will be also be removed. The new location will be directly above the north/south section of the relocated north/south steam tunnel. The easternmost active tunnel structure will have to be moved directly east to coordinate with the parking ramp entrance road. A new vent will be positioned above the relocated tunnel (as noted below) to the southeast of its current location above the current grass area south of the parking lot. Refer to the Civil site plan with the new loading dock and entrance road overlaid for this area.

(d) Additionally, the active north/south campus steam tunnel serving the north campus will have to be completely relocated approximately 50’ to the east. Refer to the Structural narrative for details on the new north/south campus steam tunnel.

(e) Extensive coordination with UIUC utilities will have to be done, both in relocation and outages for each utility.

- The following utilities will have to be taken off line and replaced with new at the new tunnel location:
  - (a) 16” campus pressure steam
  - (b) 10” utility pressure steam
  - (c) 6” high pressure steam
  - (d) 1-1/2”high pressure steam
  - (e) 4” vacuum return
  - (f) 6” pumped return
  - (g) 10” campus pressure steam
  - (h) 10” utility pressure steam

Figure 1. Existing Steam Vent (to be replaced)

c. Domestic water enters the building in various locations as follows:

1) Southwest corner at Mechanical Room #6. This location will remain, as the area will remain as mechanical space when the master plan revisions are implemented.

2) Northeast corner of the north building. This location will be have to be reviewed as part of the master plan revisions to confirm if it will be viable to remain.

2) Southwest corner of sub-basement Mechanical Room #6. This location will remain, as the area will remain as mechanical space when the master plan revisions are implemented.

d. Sanitary exits the building at various locations as follows:

1) Two locations at the north side of the north building.

2) Three locations on the east side of the building. These mains will

be impacted by the parking garage alternate.
3) One location at the south side of the south building.
4) All these locations and main sizes identified will be have to be reviewed as part of the design phase of the master plan to confirm if they will be viable to remain at the locations noted above.
5) No significant sanitary load is being added as part of the facilities master plan. The size of the existing mains will likely be adequate. That said, some changes to the underfloor sanitary, as well as the site utility exit point locations, may be required based on the program adjustments being made.

e. Storm exits the building at various locations as follows.
1) Three locations at the north side of the north building.
2) One location on the east side of the building. This main will be impacted by the parking garage alternate.
3) One location on the southeast side of the south building.
4) Six locations on the west side of the building at various locations.
5) All these locations and main sizes identified will be have to be reviewed as part of the master plan design to confirm if they will be viable to remain at the locations noted above.
6) There will be some new square footage and associated roof area added as part of the facilities master plan. The size of the existing mains and exit points will need to be evaluated during the master plan design.

f. Natural gas enters the building on the east side at Mechanical Room #6.
1) This gas entrance location will remain, as the area will remain as mechanical space when the master plan revisions are implemented.
2) Main sizing will need to be evaluated during the master plan design based on the new equipment load.

5. **Systems Overview**

a. Temperature Controls
1) A complete DDC control system will be installed per UIUC standards for the facility that will be compatible and communicate with the central campus system.
2) Multiple data outlets will be provided at each mechanical room to meet controller requirements.
3) All controls will be electronic actuation unless noted otherwise.
4) The master plan facility upgrade will expand on the 2016 DDC upgrade project to integrate the balance of the equipment to be full DDC, with the goal of keeping all equipment on the same controls system.

b. Fire Protection
1) The entire facility will be sprinklered with a new wet pipe sprinkler system.
2) A wet manual standpipe will be installed in the stair towers where required per NFPA 14.
3) A fire pump will be required for the facility. Refer to the Lower Level Fire Protection section for specifics.
4) A dry pipe system may be needed for the loading dock area. Final determination will be made during design once the spaces are defined.
5) A dry pipe system will be required for each of the two parking garage levels.
6) Fire protection zoning for each level will be separated by floor and by specific area due to the square footage of each level.
7) Refer to the zoning example based on the lower level that would be continued throughout the building. While each floor varies in size, there is approximately 72,000 square feet per floor.
(a) Zone #1: Lower level north building
(b) Zone #2: Lower level infill building
(c) Zone #3: Lower level south building

6. **Ventilation**

a. Parking Garage: (Alternate)
1) This parking garage alternate will be located below the new center section of new structure; refer to the Architectural plans.
2) Code-required ventilation supply will be ducted push-pull arrangement from the outside via a makeup fan “push” and a louver at the outside wall. Distribution points of the ventilation supply will be determined based on the garage layout for the proposed two-level structure. Ventilation will be “pulled” through the space via an exhaust fan located on an exterior wall of the parking area.
3) Carbon monoxide and nitrous oxide monitoring will be provided for makeup/exhaust fan control.

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2) The location of the makeup and exhaust fans will likely be near the east garage entrance area. Final equipment locations will be determined during the project design phase.

b. Lower Level
   1) Fitness Area (AHU-1NW)
      (a) This area on the west side will be served with a VAV air handling unit with energy recovery located in the new mechanical room. This unit will be approximately 22,000 CFM. The unit will be sized using code compliant outdoor air for ASHRAE 62 compliance.
      (b) Each room on the lower level will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones. Occupancy and/or CO2 sensors will be used for larger assembly spaces.
      (c) A plate-type energy recovery will allow for a high percentage of outside air to be pre-treated and to achieve the air turnover rate needed for this type of space.
      (d) Outside air and relief air will be served via louvers incorporated in the window wells on the north and west sides of the room. Enlargement of the recessed window wells to create a larger area well will be required to get the proper louver area.

c. Kitchen/Loading
   1) These spaces will be served by existing units AHU-16 and AHU-17 located in sub-basement Mechanical Room #6 and lower level Mechanical Room #1, respectively. AHU-16 has a total capacity of 15,350 CFM and AHU-17 has a total capacity of 12,000 CFM. This airflow will be adequate for these two new spaces. The unit configurations will remain unchanged from when they were upgraded in 2012. The outside air quantity and existing louver size will be reviewed during design.
   2) The Kitchen area could use terminal air boxes to displacement ventilation devices at the ceiling within the space for exhaust hood makeup air. The air temperature at the displacement devices will be higher than the VAV zones noted below.
   3) All other zones within the Kitchen will be served by conventional terminal air boxes with reheat coils.
   4) Each loading dock zone on the lower level will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones.
   5) Air curtains will be provided at all large door openings to the outside.
   6) Dedicated exhaust fans/grease exhaust fans and associated distribution systems will be provided per NFPA 25 requirements for any required kitchen hoods. Each will require its own two-hour fire wrap.
   7) Hood exhaust will have to be carefully routed up through the space from its location on lower level, exiting at the roof level.
   8) Other dedicated exhaust systems required to meet the program requirements for the maintenance, loading dock, and restroom spaces will be provided.
   9) Exhaust risers will be routed vertically via mechanical duct chases located in the north building and new center portion of the building, exiting on the Fourth Floor roof or penthouse roof.
   10) All specific chase locations are not shown on the Architectural master plans.

d. Maintenance and Operations (AHU-2NW)
   1) This area in the center of the lower level will be served with a new VAV air handling unit located in the new mechanical room. This unit will be approximately 12,000 CFM. The unit will be sized using code-compliant outdoor air for ASHRAE 62 compliance.
   2) Each zone on the lower level will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones. Occupancy and/or CO2 sensors will be used for larger assembly spaces.

e. Stage Club/Theatre (AHU-1SE)
   1) This area in the center of the lower level will be served with a displacement ventilation air handling unit located in the north side of existing Mechanical Room #88. This unit will be approximately 21,000 CFM. The unit will be sized using code-compliant outdoor air for ASHRAE 62 compliance.
   2) Each Theatre zone on the lower level will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Occupancy and/or CO2 sensors will be used for larger assembly spaces.

f. Bowling and Rec./Support (AHU-2SE)
   1) This area in the south portion of the lower level will be served with

a new VAV air handling unit located in the south portion of existing Mechanical Room #88. This unit will be approximately 46,000 CFM and will serve the entire Bowling and support space. The unit will be sized using code-compliant outdoor air for ASHRAE 62 compliance.

2) Unit size will be evaluated based on the back-of-house spaces for the non-occupied bowling pin area to have air pulled from the occupied space. This area can have a higher space temperature, and pulling from the occupied zone may allow the unit to be smaller.
3) Outside air and relief air will be served via louvers within area wells on the west side of the room to match that of the existing units within this space.
4) Outside air quantity and existing louver size will be reviewed during design and modified as required for the new AHU CFM.
5) Each zone on the lower level will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones. Occupancy and/or CO2 sensors will be used for larger assembly spaces.

g. First Level Plan

1) North Building Quiet Lounge, Pine Lounge, North Lounge, Colonial Room, and Tech Storage
   (a) These areas/zones will be fed from existing AHU-18 located in Mechanical 400.
   (b) Most of these zones were updated as part of the 2011 HVAC infrastructure project with new terminal air boxes and distribution ductwork. The team will need to evaluate which terminal air boxes could potentially be reused to accommodate the new layout and cooling load.
   (c) New supply and return duct risers with new supply and return duct mains will be used where it makes sense. Some of the existing installed in 2011 will be reused wherever possible.
   (d) Each new zone on the First Floor level will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones. Occupancy and/or CO2 sensors will be used for larger assembly spaces.
2) West Lounge/Quad Lounge/Credit Union/Dining (AHU-2C)
   (a) This area in the south and central portion of the First Level plan will be served with a VAV air handling unit located in a new mechanical penthouse. Refer to the penthouse plan. This unit will be approximately 40,000 CFM and will serve the entire spaces defined. The unit will be sized using code-compliant outdoor air for ASHRAE 62 compliance.
   (b) Outside air and relief air will be served via louvers on the exterior wall of the penthouse. Careful consideration will be made to separate the outside air and exhaust/relief air louvers for the entire penthouse spaces.
   (c) Each zone on the First Level plan will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones. Occupancy and/or CO2 sensors will be used for larger assembly spaces.
3) Food Court (AHU-1C)
   (a) This area in the central portion of the First Level plan will be served with a new VAV air handling unit located in a new mechanical penthouse. Refer to the Penthouse Level plan narrative.
   (b) This unit will be approximately 36,000 CFM and serve the entire spaces defined. The unit will be sized using code-compliant outdoor air for ASHRAE 62 compliance.
   (c) The food prep areas will use terminal air boxes to displacement ventilation devices at the ceiling within the space for exhaust hood makeup air. The air temperature at the displacement devices will be approximately 62° in lieu of the normal 55° VAV zones noted below.
   (d) All other surrounding zones within the Food Court will be served by conventional terminal air boxes at 55° supply temperature.
   (e) Each zone will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones.
   (f) Dedicated exhaust fans/grease exhaust fans and associated distribution systems will be provided per NFPA 25 requirements for any kitchen hoods.
   (g) Other dedicated exhaust systems required to meet the program requirements for the maintenance, loading dock, and restroom spaces will be provided.
   (h) Exhaust risers will be routed vertically via mechanical duct chases located in the north building and new center portion of the building, exiting on the Fourth Floor roof or penthouse roof.

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(a.)All specific chase locations are not shown on architectural master plans.

h. Second Level Plan
   1) Center Senate Forum/Organization (AHU-3C)
      (a) This area in the central portion of the Second Level plan will be served with a new chilled beam air handling unit located in a new mechanical penthouse. Refer to the Penthouse Level plan narrative.
      (b) This unit will be approximately 27,000 CFM and will serve the entire spaces defined. The unit will be sized using code compliant outdoor air for ASHRAE 62 compliance.
      (c) Each zone will have its own terminal air box for beam primary air. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones.
      (d) Each zone will also have active chilled beams. A space temperature sensor, humidity sensor, and occupancy sensor will be provided to maintain zone conditions.
   2) Ballroom
      (a) This space will be served by existing AHU-19 located in northeast Mechanical Room #400. AHU-19 has a total capacity of 20,000 CFM. This airflow should be adequate for these new spaces as this is the same area served by AHU-19 from the 2012 Infrastructure upgrade project. The unit configurations will remain unchanged. The outside air quantity and existing louver size will be reviewed during design.
      (b) The Ballroom zone served by AHU-19 will have multiple VAV boxes for this one large zone. Each will have a reheat coil and space sensor for temperature control of each zone. Occupancy and/or CO2 sensors will be used for larger assembly spaces.
      (c) The reuse of existing terminal air boxes will be evaluated during design.

i. Third Level Plan
   1) Illini Rooms (AHU-4C)
      (a) This area in the center of the Third Level will be served with a displacement ventilation air handling unit located in the new penthouse mechanical room directly above this zone. This unit will be approximately 46,000 CFM. The unit will be sized using code-compliant outdoor air for ASHRAE 62 compliance.
   2) Each Illini room zone will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Occupancy and/or CO2 sensors will be used for larger assembly spaces.
   3) Levels 2 through 4 - North Building (Center/West) Sections
      (a) These spaces will be served by existing AHU-18 located in northeast Mechanical Room #400. AHU-18 has a total capacity of 41,525 CFM. This airflow should be adequate for these new spaces as this is the same area served by AHU-18 from the 2012 Infrastructure upgrade project. The unit configurations will remain unchanged. The outside air quantity and existing louver size will be reviewed during design.
      (b) Each zone for all three levels served by AHU-18 will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones. Occupancy and/or CO2 sensors will be used for larger assembly spaces.
      (c) The reuse of existing terminal air boxes will be evaluated during design.
   4) Levels 2 through 4 - South Building (All)
      (a) All Level 2, Level 3 meeting, and corridor spaces will be fed from a new VAV air handling unit (AHU-1S) located in the existing Fourth Floor south mechanical penthouse. This unit will be approximately 35,000 CFM.
      (b) The Levels 3 and 4 private rooms will be fed by a dedicated outdoor air unit with energy recovery (DOA-1) located in the existing Fourth Floor south mechanical penthouse. DOA-1 will be approximately 4,000 CFM.
         - Each of these private room spaces will have a four-pipe vertical fan coil unit at the exterior wall for space heating and cooling.
      (c) The VAV and DOAs unit will be sized using code-compliant outdoor air for ASHRAE 62 compliance.
      (d) Outside air and relief air will be served via louvers built into the existing window dormers on the exterior of the penthouse. Careful consideration will be made to separate the outside air and exhaust/relief air louvers for the entire penthouse spaces.
      (e) Each zone of the VAV unit will have its own VAV box. Each will have a reheat coil and space sensor for temperature control of each zone. Rooms with similar load profiles will NOT be combined into common zones. Occupancy and/or CO2 sensors

will be used for larger assembly spaces.

j. Fourth Level Mechanical Room Plan
   1) Northeast Mechanical Penthouse
      (a) This area contains the following units with the areas they serve.
         - AHU-18E - Level 2-4 west/center sections of building
         - AHU-19E - Level 3 Ballroom.

k. Fifth Level
   1) Center Mechanical Penthouse
      (a) This area contains the following units with the areas they serve.
         - AHU-1C - Food Court - Level 1 - VAV unit
         - AHU-2C - West Lounge/Quad Lounge/Credit Union/Dining - Level 1 VAV unit
         - AHU-3C - Center Senate Forum/Organization - Level 2 - chilled beam unit
         - AHU-4C - Illini Room - Level 3 - displacement ventilation unit
   2) South Mechanical Penthouse
      (a) This area contains the following units with the areas they serve.
         - AHU-1S - Levels 2 and 3
         - DOA-1 - Levels 3 and 4 private rooms

l. Typical air handling unit components are as follows:
   1) The VAV, chilled beam, or displacement AHU may contain the following components:
      (a) Supply fan with variable frequency drive
      (b) Return fan with variable frequency drive
      (c) Pre-filters (30% and 65%)
      (d) Hot water heating coil
      (e) Chilled water cooling coil
      (f) Economizer section
      (g) Total energy recovery wheel when applicable for OA quantity.
      (h) The fitness area will be plate type energy recovery.
      (i) Desiccant energy recovery wheel for the chilled beam unit

7. **Heating**

a. Lower Level
   1) This level will be fed from both the perimeter heating water loop and the reheat heating water loop. A reverse return loop will be routed for both loops on this floor. Refer to the Fourth Floor Penthouse section for heating plant information and the following.
   2) Reheat Heating Water Loop
      (a) Reheat coils from each terminal air box on this floor.
   3) Perimeter Heating Water Loop
      (a) All AHU heating coils
      (b) Unit heaters
      (c) Cabinet heaters
      (d) Baseboard radiation
   4) Chilled Water
      (a) The chilled water supply/return mains, including metering components entering the building in the southwest corner of Mechanical Room #88, will be reused.
      (b) Branch piping and routing will be evaluated during design of the space. Many of the existing risers to the mechanical room spaces that remain will likely be reused. New branch piping will be installed to the new mechanical rooms as required.
      (c) Chilled water could potentially be routed to water-cooled coolers/freezers in the Kitchen. Final determination will be made when equipment is selected during design.
   5) Steam
      (a) The steam entrance points as defined above in the Utilities section in Mechanical Room #6 will remain. A new condensate meter will be located in Mechanical Room 6D.
      (b) The design intent will be to set up three specific steam risers on this level to serve the following:
         - North Riser
            - Serving the existing north building heating plant located in Mechanical Room 400.
         - Center Riser
            - Serving the new center structure heating plant located in the new mechanical penthouse.
         - South Riser
            - Serving the existing south building heating plant in Mechanical Room 500.
   6) Miscellaneous heating/cooling devices used:
      (a) Provide heating/cooling horizontal fan coil units to condition the following rooms:
         - New Northwest Mechanical Room
            - One at 2 ton
         - Mechanical Room #6
            - One at 2 ton
         - Mechanical Room #1
            - One at 2 ton
         - Mechanical Room #88

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- Two at 2 ton

(b) Provide unit heaters for heating only spaces at the loading docks.

(c) Provide cooling-only wall-mounted fan coil units for the following:

- Main Electrical Room #89
  - Three at 3 tons
- Lower Level Telecom Rooms
  - One at 1 ton each space
- Existing Electrical Room #9
  - Three at 3 tons
- Elevator equipment rooms
  - One at 1 ton each

(d) Provide cabinet heaters at the bottom of each stairwell and all vestibules to the outdoors.

b. Level 1 Plan

1) Heating Hot Water

(a) This level will be fed from both the perimeter heating water loop and the reheat heating water loop. A reverse return loop will be routed for both loops on this floor and will serve the following on Level 1. Refer to the Fourth and Fifth Floor Penthouse sections below for heating plant information.

2) Reheat heating water loop serving:

(a) Reheat coils from each terminal air box on this floor.

3) Perimeter heating water loop serving:

(a) Cabinet heaters

(b) Baseboard radiation

4) Provide cabinet heaters at both north and south entrances.

5) Provide baseboard radiation at all perimeter zones.

6) Provide 1-ton cooling-only wall-mounted fan coil units for each small electrical and telecom rooms.

c. Levels 2 and 3 Plans

1) Heating Hot Water

(a) This level will be fed from both the perimeter heating water loop and the reheat heating water loop. A reverse return loop will be routed for both loops on this floor and will serve the following on Levels 2 and 3. Refer to the Fourth Floor Penthouse section for heating plant information.

2) Reheat heating water loop serving:

(a) Reheat coils from each terminal air box on this floor.

3) Perimeter heating water loop serving:

(a) Cabinet heaters

(b) Baseboard radiation

4) Provide cabinet heaters at stairwells.

5) Provide baseboard radiation at all perimeter zones.

6) Provide 1-ton cooling-only wall-mounted fan coil units for each small electrical and telecom rooms.

d. Level 4 Plan

1) Heating Hot Water

(a) Mechanical Room 400

- Existing heat exchanger HE-2, associated HWP-2 and HWP-3 serving the AHU-18, AHU-19, and north building reheat coils will remain. This unit is sized for additional load and will be sized for the reheat load.
- A new redundant steam-to-hot water heat exchanger with redundant heating water pumps that will serve as the perimeter heating water loop source for new baseboard radiation will be installed in this space. Piping modifications will be done to separate the perimeter heating water loop from the reheat loop. AHU-18 and AHU-19 pre-heat and reheat coils will be added to this system to match UIUC standards for both loops.

(b) Distribution will be fed from both the perimeter heating water loop and the reheat heating water loop defined above. A reverse return loop will be routed for both loops on this floor and will serve the following on Level 4.

2) Reheat loop serving:

(a) North building reheat coils from each terminal air box.

3) Perimeter loop serving:

(a) AHU-18, AHU-19 (pre-heat and reheat coils)

(b) Cabinet heaters

(c) Baseboard radiation

4) Provide cabinet heaters at stairwells.

5) Provide baseboard radiation at all perimeter zones.

6) Provide 1-ton cooling-only wall-mounted fan coil units for each small electrical and telecom rooms.

e. Level 5 Plan

1) Heating Hot Water

(a) New Center Penthouse Mechanical Room

- A new redundant steam-to-hot water heat exchanger

with redundant heating water pumps that will serve as the perimeter water loop source will be installed in this space.
    - These devices will be sized for 140° hot water with a 20° delta T. This allows flexibility for higher efficiency system changes in the future, allowing some flexibility in the terminal equipment sizing.
    - AHU heating coils would be sized for 135°.
- A new redundant steam-to-hot water heat exchanger with redundant heating water pumps that will serve as the reheat water loop source will be installed in this space.
- Distribution will be fed from both the perimeter heating water loop and the reheat heating water loop defined above. A reverse return loop will be routed for both loops on this floor and will serve the following on Level 4.
- New steam mains will be installed to serve each new heat exchanger.

2) Reheat loop serving:
   (a) Center building reheat coils from each terminal air box.
3) Perimeter loop serving:
   (a) West Lounge/Quad Lounge/Credit Union/Dining AHU-2C
   (b) Food Court AHU-1C
   (c) Illini Room AHU-3C
   (d) Center Senate Forum/Organization chilled beam AHU-3C
   (e) Cabinet heaters
   (f) Baseboard radiation
4) Provide cabinet heaters at stairwells.
5) Provide heating/cooling horizontal fan coil units for the penthouse.

f. Mechanical Room 500
   1) Heating Hot Water
      (a) A new steam-to-hot water redundant heat exchanger with redundant heating water pumps that will serve as the perimeter water loop source will be installed in west end of this space.
      (b) A new steam-to-hot water redundant heat exchanger with redundant heating water pumps that will serve as the reheat water loop source will be installed in the west end of this space.
      (c) Distribution will be fed from both the perimeter heating water loop and the reheat heating water loop defined above. A reverse return loop will be routed for both loops on this floor and will serve the following on Level 4.
      (d) New steam mains will be installed to serve each new heat exchanger.
      (e) Reheat loop serving:
         - South building reheat coils from each terminal air box.
      (f) Perimeter loop serving:
         - New AHU-1S
         - New DOA-1
         - Cabinet heaters
         - Baseboard radiation
   2) Provide cabinet heaters at stairwells.
   3) Provide baseboard radiation at all perimeter zones.
   4) Provide 1-ton heating/cooling horizontal fan coil units for the penthouse.

8. **Plumbing**

a. Lower Level
   1) Mechanical Room #88:
      (a) Domestic hot water for the facility is located in this space. The following equipment will remain at its current location and will be reused:
         - Water heaters WH-1 and WH-2
         - Domestic water circulation pumps DCP-1 and DCP-2
         - Central mixing valve
         - Domestic water storage tanks DHWT-1 and DHWT-2
         - Condensate return station CR-1
      (b) Provide 115° hot water, cold water, and hot water circulating distribution piping to all plumbing components.
      (c) Provide 140° hot water piping to all required kitchen equipment.
      (d) Water-saving plumbing fixtures will be used with the goal to exceed 35% reduction in water to assist in meeting LEED goals.
      (e) A domestic booster pump, if required for the facility, will be located in Mechanical Room #88. Final determination on the booster pump will be made during design.
      (f) A new domestic water steam-to-hot water heat exchanger and circulation pump serving both the restrooms and the dishwasher will be provided. The units will be located in Mechanical Room #1. These will replace the current units in this space.

b. Level 1 through Level 4 Plans
   1) Provide 115° hot water, cold water, and hot water circulating distribution piping to all plumbing components.
   2) Provide 140° hot water piping to all required Food Court equipment.
   3) Water-saving plumbing fixtures will be used, with the goal to exceed 35% reduction in water to assist in meeting LEED goals.

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9. **Fire Protection**

    a. Lower Level
        1) Mechanical Room #88
            (a) A dedicated water service/fire pump room will be created in the space.
            (b) A new 100 HP fire pump, 1 HP jockey pump, and controller will be installed. Confirmation of fire pump size will be determined during design.
            (c) Refer to General Fire Protection Item #5 above for additional fire protection information.

    b. Level 1 through Level 4 plans
        1) Refer to Systems Overview above.

A. Electrical

1. **Codes and Standards**

    a. National Electrical Code 2011

    b. IECC 2015

    c. NFPA 101 and 72

    d. NEMA

    e. ANSI

    f. IEEE

2. **Electrical Demolition**

    a. Historic light fixtures will be removed and refurbished with LED lamping.

    b. All receptacles, lights, conduit, and wiring will be removed.

    c. Selective demolition on distribution panels, motor control centers, and branch panels that are older than 2010 vintage will be removed. Newer panels that are located in existing walls will be removed if the wall is removed.

    d. The existing fire alarm system will be upgraded to a newer model, and the old system removed.

    e. The lightning protection system will be removed.

    f. Emergency power system will be maintained until the new system is installed. The existing system can then be removed.

3. **Site Electrical**

    a. Truck Dock and Underground Parking Deck (BASE)
        1) Relocate the north-south 24-cell ductline between existing Manhole 123 and existing Manhole 298.
        2) Provide new 4-5” cell ductline to Illini Union to refeed the North Substation.
        3) The existing medium voltage switch located in Illini Union will be removed.
        4) Relocate or remove outdoor lights as required for the renovation and addition.
        5) Provide a new feed for a new 500 KVA 4.16KV to 120/208V, 3-phse, 4wire unit substation located in the north part of the building.

    b. Truck Dock (Option 1) or Skinny Truck Dock (Option 2)
        1) Relocate the north-south 24-cell ductline between existing Manhole 123 and existing Manhole 298.
        2) Provide new 4-5” cell ductline to Illini Union to refeed the North Substation.
        3) The existing medium voltage switch located in Illini Union will be removed.
        4) Relocate or remove outdoor lights as required for the renovation and addition.

4. **Building Service and Distribution**

    a. Reuse the existing unit substations in the north portion of the building and in the southwest portion of the building. The north has a 1000/1333KVA 4.16KV to 277/480V substation. The south has a 750KVA 4.16KV to 277/480V and a 750KVA 4.16KV to 120/208V unit substation.

    b. Building Load Calculation: 285,000 square feet x 8 W/sqft = 2,280,000 W/.85pf = 2,682,353 VA. Let’s say 2,700 KVA.

    c. If an underground parking deck is added: 48,000 square feet x 3 W/sqft = 144,000 W/.85 pf = 169,412 VA. Let’s say 200 KVA.

    d. If the underground parking deck is part of the project, then either the north

unit substation will need to be upsized to a 1500/2000KVA 4.16KV to 277/480V or a 500 KVA 4.16KV to 120/208V substation added in the north portion of the building.

e. The 277/480V 3-phase, 4-wire secondary sides of the unit substations will provide a 480V, 3-phase, 3-wire service to appropriately sized motor control centers or distribution panels located in the mechanical rooms of the building. It will also provide 277/480V, 3-phase, 4-wire service to distribution panels. These distribution panels will provide 277/480V, 3-phase, 4-wire service to appropriately sized lighting branch panels located in electrical rooms in the north and south part of the buildings on each floor.

f. The 120/208V 3-phase 4-wire secondary side of the unit substation will provide service to appropriately sized distribution panels located in electrical rooms in the north and south portion of the building on each floor. These panels, in turn, provide 120/208V, 3-phase, 4-wire service to appropriately sized branch panels located on each floor of the building.

g. The 277/480V 3-phase, 4-wire branch panels will provide 277V single phase service to lighting throughout the building, except for the hotel rooms and refurbished historic light fixtures, which will be 120V single phase.

h. The 120/208V, 3-phase, 4-wire branch panels will provide 120V or 208V single phase or 208V 3-phse service to receptacles and electrical equipment needing this type service.

i. Each kitchen, Theater, Recreation Center and Fitness Center will have its own branch panels.

j. All wiring, transformer windings, and bussing will be copper.

k. All wiring will be in conduit.

l. All AHUs and heating water pumps will be on variable frequency drives (VFDs).

5. **Emergency Power**

a. Provide an appropriately sized indoor diesel generator at 277/480V, 3-phase, 4wire, with an emergency and optional standby branch, as well as a separate feed to the emergency side of the fire pump transfer switch.

b. The emergency branch will provide power for exit signs, egress lighting, and designated ADA-accessible elevators.

c. An optional standby branch will provide power to sump pumps, sewage ejector pumps, heating water pumps, freezers, and coolers.

d. The diesel generator will have its own room, and the electrical equipment for the emergency and optional standby system will have its own room.

e. The appropriately sized transfer switches will be automatic 4-pole type transfer switches.

6. **Lighting**

a. Lighting will be LED type throughout the building and site lighting.

b. Refurbish the historical light fixtures to LED type.

c. Light levels will be per current IES standards.

d. Lights will be at 277V, except the hotel room lights and refurbished historical lights will be 120V.

e. Egress lighting will be per current code and will be fed from the emergency power system fed by the diesel generator.

f. Exit signs will be LED type with red lettering and will be fed from the emergency power system fed by the diesel generator.

7. **Lighting Controls**

a. Lighting controls will meet 2015 IECC code.

b. There will be separate lighting controls systems for the Theater, Club, Ballroom, Dining, Illini Rooms, Bowling/Recreation rooms, and meeting rooms, with programmable four-scene controls. Meeting rooms and the Theater will integrate with the audio/visual system.

c. Office areas will have low voltage switching, dimming, and dual technology occupancy sensors.

d. Corridors and restrooms lighting will be controlled by ultrasonic occupancy sensors. Corridors may also have daylight harvesting to control the lights by windows.

e. Storage, mechanical, and electrical rooms will have switches and dual technology occupancy sensor controls.

f. The lounges, Colonial Room, Tech Store, and Art Gallery will be controlled by switches and vacancy sensors. In areas with windows, day light

harvesting will help control the lights.

8. **Fire Alarm System**

   a. The existing fire alarm system will have to be maintained until the new fire alarm system is operational.

   b. The fire alarm panel will be a Siemens Fire Life Safety Panel Type MXL.

   c. The fire alarm system will be designed per code and UIUC standards.

   d. Notification will be by voice speakers, visual lights, and combination voice speaker/visual light.

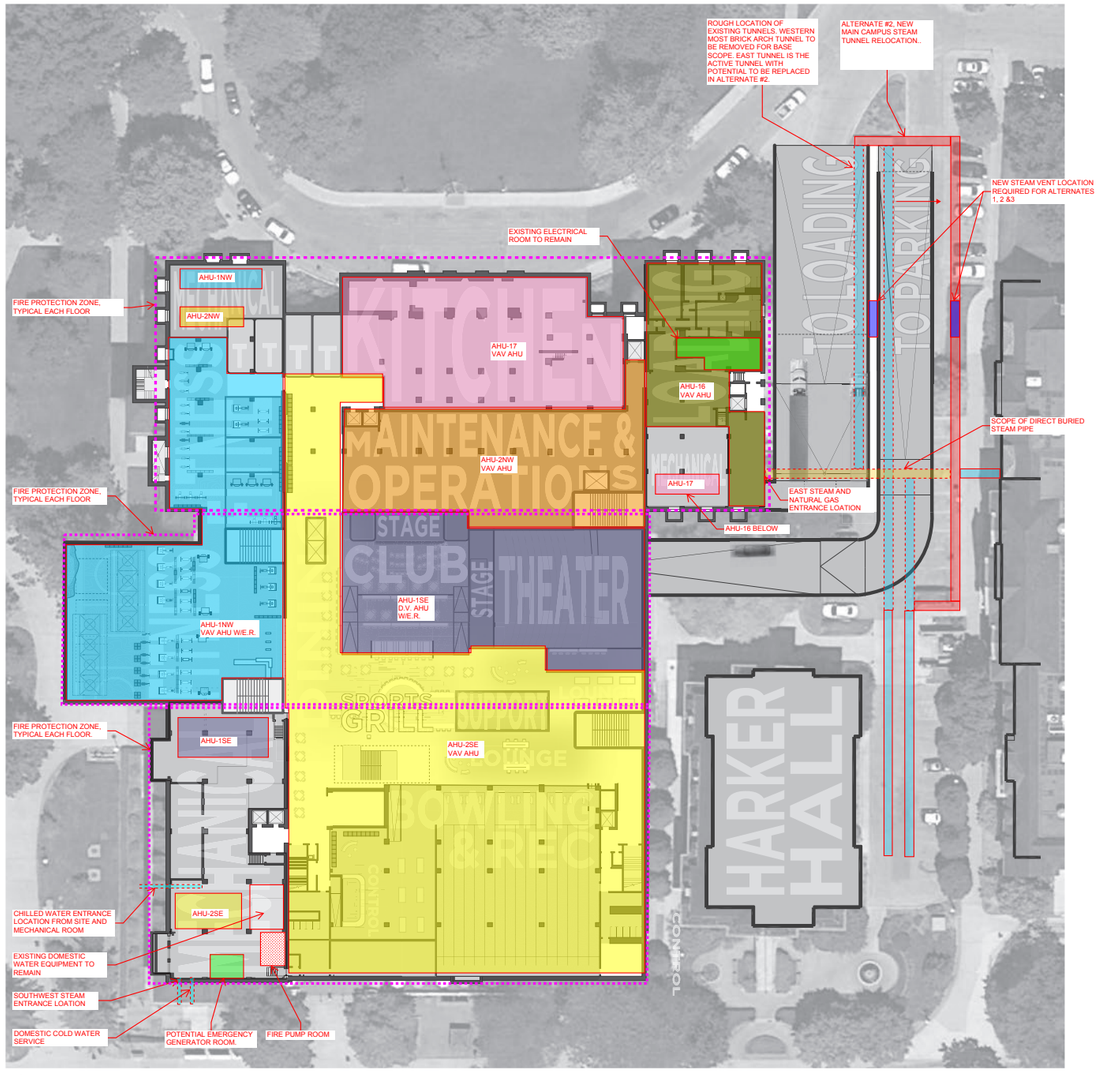
9. **Lightning Protection System**

   a. A new lightning protection system will be installed on the building per NFPA Art. 780.

10. **Photovoltaics**

    a. An appropriately sized PV array will be mounted facing south on top of the penthouse roof. The convertors will be located in the penthouse and will feed the penthouse motor control centers.

MEP Concept Diagrams



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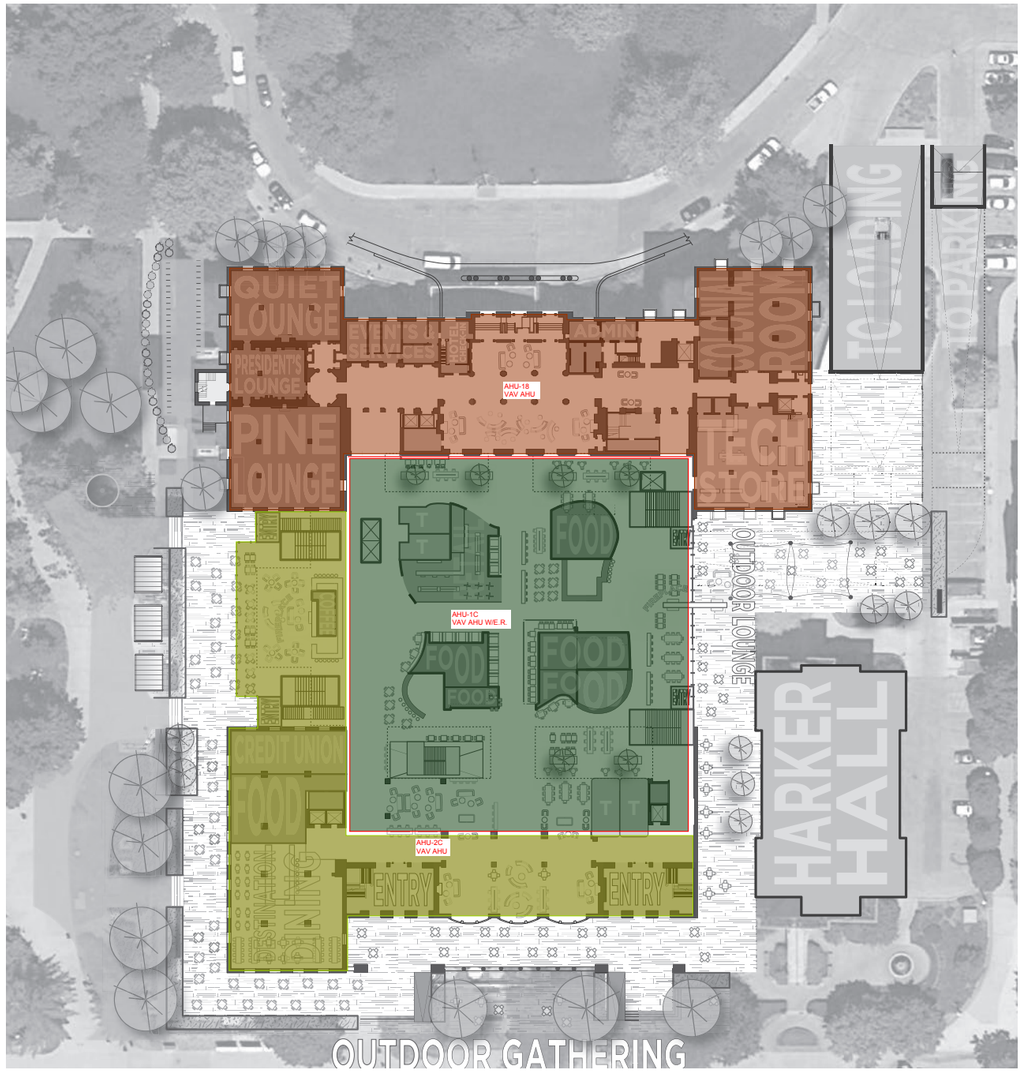
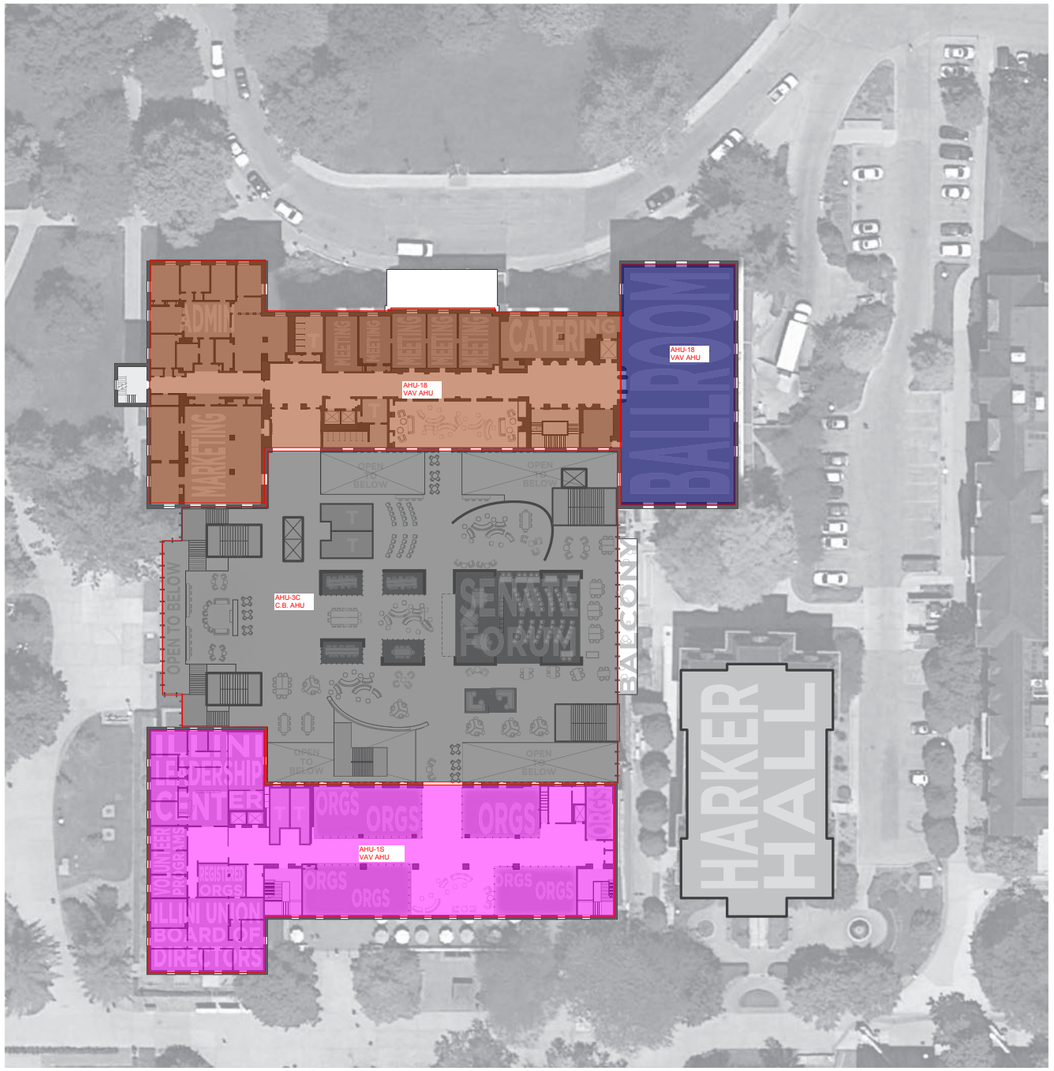
Lower Level



Level 1

MEP Engineering Analysis

MEP Concept Diagrams



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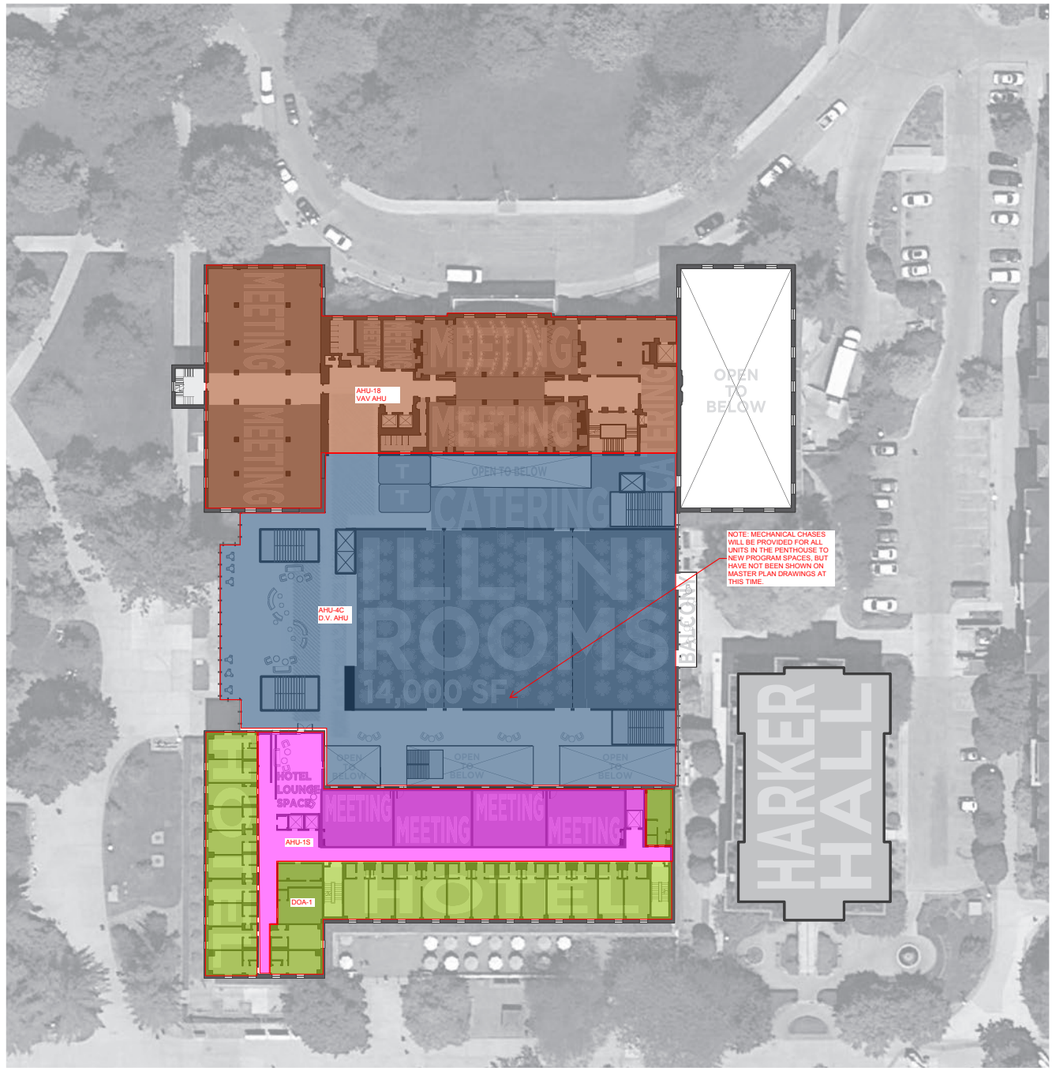
Level 2



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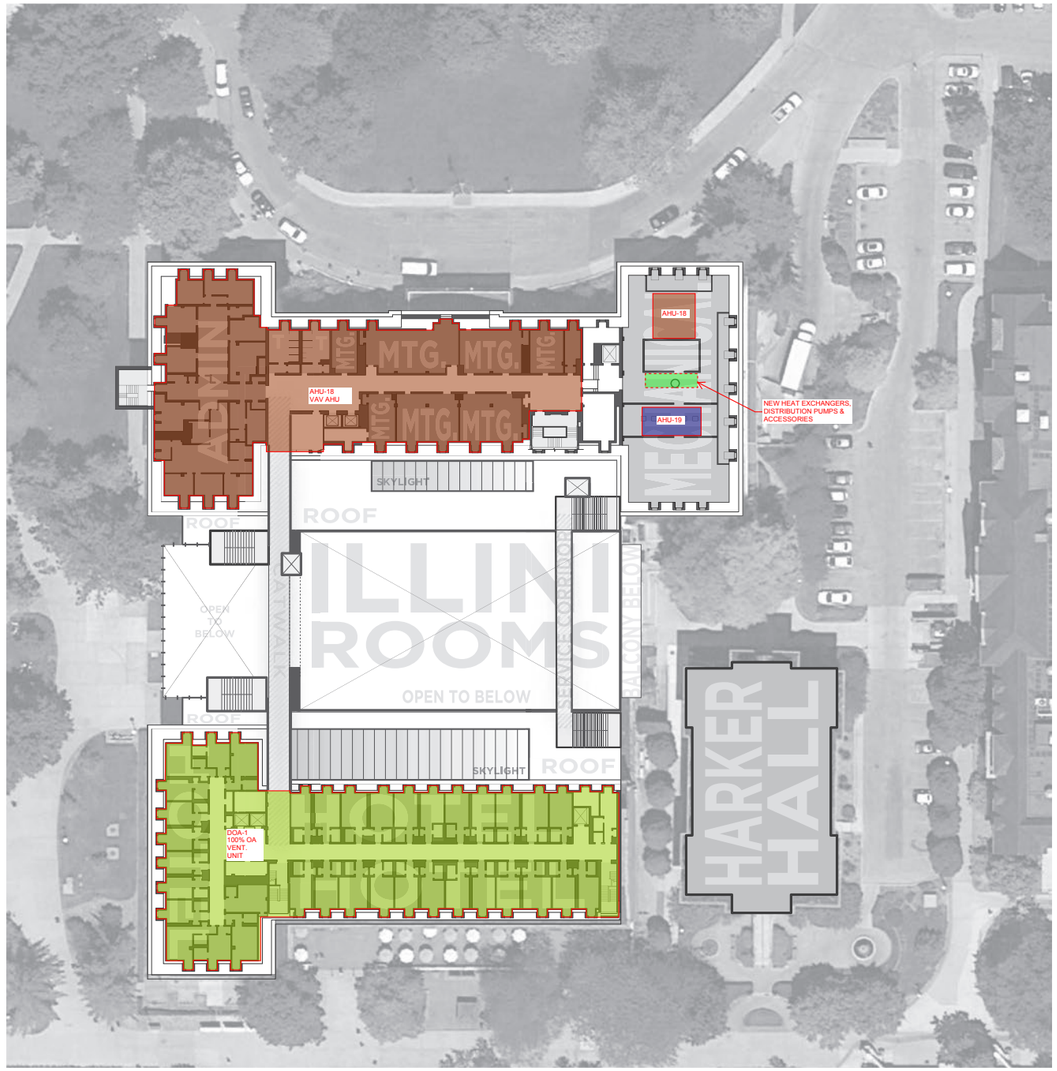

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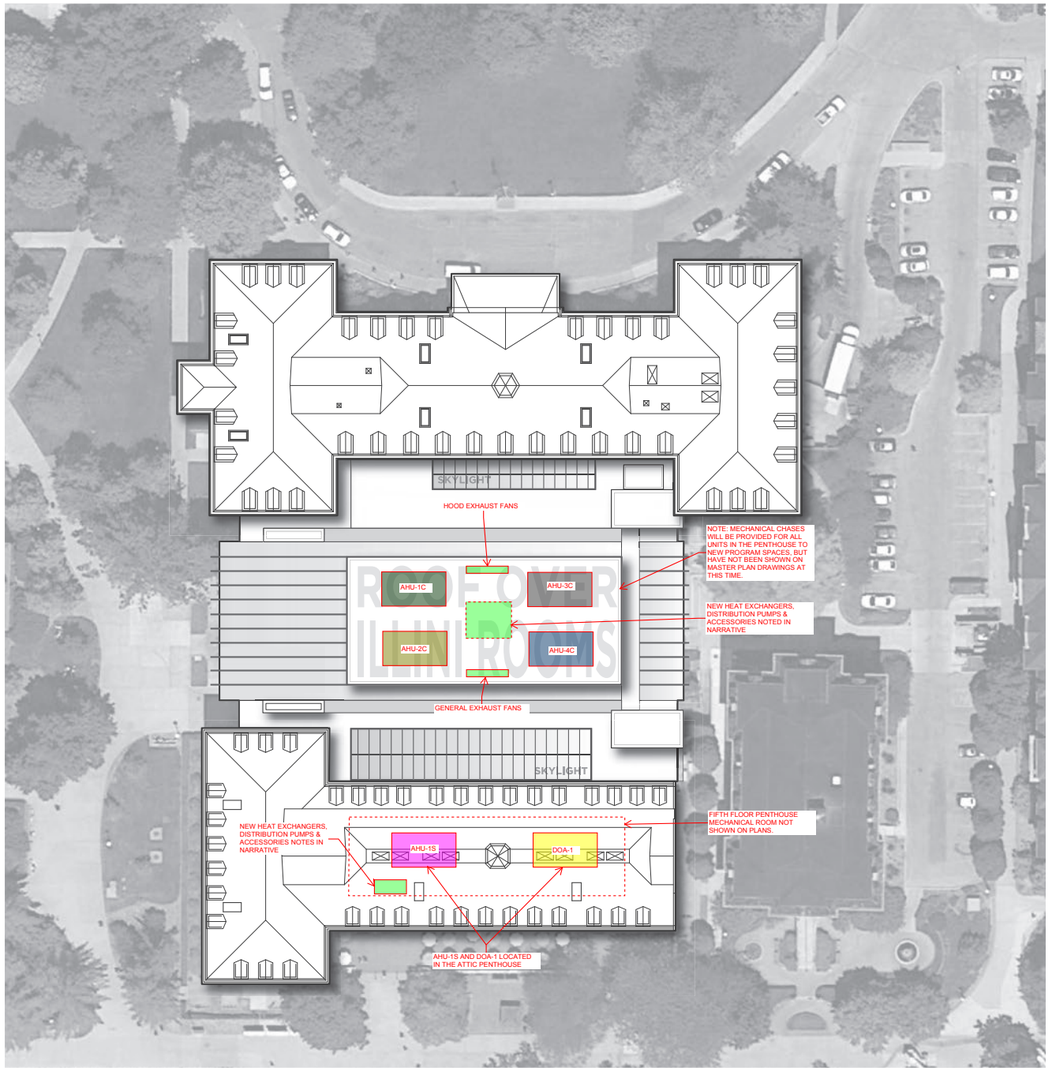


Penthouse Level

Environmental Analysis

Environmental Analysis

ACM, LEAD-BASED PAINT AND HAZARDOUS MATERIALS

Building:	Illini Union
Address:	1401 West Green Street Urbana, Illinois 61801
Number of Floors:	8 (2 floors below grade)
Date of Original Construction:	Original building on the north side - 1939 South Addition - 1960 Center area - 1994
Square Footage:	367,882
Construction Type:	Concrete frame, masonry block walls and brick veneer
Current Use:	Multiple purposes

SCOPE OF WORK

D.A.S. Consulting Services, LLC (D.A.S.) was retained by Dewberry (CLIENT) to conduct an asbestos and lead-based paint conditions assessment as part of the facility study of the Illini Union located at the University of Illinois, Urbana-Champaign (UIUC) on 1401 West Green Street in Urbana, Illinois. The assessment was conducted by Illinois Department of Public Health (IDPH) licensed asbestos inspectors and lead-risk assessor. The conditions assessment was to determine potential impacts from asbestos and lead-based paint prior to the proposed renovation activities. D.A.S. scope included reviewing the available environmental documents that included the Asbestos Management Plan (dated May 10, 2003) and the EDI report (dated July 6, 2015) for the Illini Union, and reviewing the proposed renovation plans for this facility study as it relates to affected ACM or lead-based paint. D.A.S.'s scope did not include conducting bulk sampling of asbestos or lead-based paint materials. If hidden or inaccessible areas are discovered or suspect materials that were not sampled and not included in these reports are identified, then these suspect building materials should be inspected by an IDPH-licensed asbestos/lead inspector or lead risk assessor or hazardous materials specialist to determine if the material contains asbestos or lead prior to any disturbance or the suspect material can be assumed to be asbestos, lead or other hazardous materials and addressed accordingly.

I. ASBESTOS

APPLICABLE ASBESTOS REGULATIONS AND STANDARDS

The United States Environmental Protection Agency (USEPA) National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, requires that prior to any renovation or demolition activity, a facility must be thoroughly inspected for suspect asbestos materials. Suspect building materials must be inspected by an IDPH-licensed building inspector and in accordance with the USEPA Asbestos Hazard Emergency Response Act (AHERA), 40 CFR Part 763. For a material to be asbestos-containing, the laboratory results must identify that greater than 1% asbestos is present in the sample. Suspect building materials are identified into three categories: thermal system insulation (TSI); surfacing; and miscellaneous materials. In addition, the Occupational Safety and Health Administration (OSHA) regulations, 29 CFR 1926.1101, and the IDPH has additional requirements for specific work activities and notification involving asbestos. OSHA regulations do not have a de minimus concentration for a material to be asbestos. Therefore, even if less than 1% or trace amount of asbestos is identified in the material, it must addressed in accordance with OSHA asbestos regulations.

ASBESTOS-CONTAINING MATERIAL (ACM) CONDITIONS ASSESSMENT

Based on the documents provided by UIUC, the type and quantity of ACM present in the building were determined. The ACM in the Illini Union is as follows:

1. Spray-on fireproofing - underside of roof on 4th floor and attic in 1930's building and various rooms in south addition
2. Duct covering- south addition (mezzanine and various rooms)
3. Pipe fittings – throughout
4. Pipe insulation runs – throughout
5. Floor tile (9" x 9" and 12" x 12") – throughout
6. Mastic for cork-like ceiling material – rooms 25B, 25C and 25D (1930's building)
7. Window glazing – throughout

The following materials are assumed ACM:

1. Vinyl sheet flooring and mastic – throughout
2. 18" x 18" floor tile and mastic – throughout
3. Fire doors – throughout
4. Brake pads on elevators – throughout
5. Transite wallboard – 1960's addition (rooms 088 and 088A)
6. Roof

Environmental Analysis

CONCLUSIONS/RECOMMENDATIONS

If ACM is disturbed, it must be abated prior to any renovation. Additional requirements and recommendations include the following:

1. Consider further analysis by transmission electron microscopy (TEM) of non-friable materials that were negative by PLM to include plaster and flooring.
2. If the amount of ACM to be disturbed is greater than 3 square or linear feet and less than 160 square feet or 260 linear feet, then submit a two (2) day notification to IDPH. If the amount of ACM to be disturbed is greater than 160 square feet or 260 linear feet, then submit a 10-day (working) NESHAP notification along with the $150 filing fee to the Illinois Environmental Protection Agency (IEPA) for the asbestos abatement.
    - Retain postmark documentation to confirm submittal to IEPA for record keeping purposes.
3. Abatement activities must be conducted by an IDPH-licensed asbestos abatement contractor, with IDPH-licensed asbestos supervisor and workers, complying with all local, state, and federal regulations.
4. It is recommended that asbestos abatement specifications and drawings be developed in the design phase of this project. Specifications should be developed in coordination with other trades and applicable regulations.
5. The containment and work practices will depend upon the amount and type of asbestos to be abated.
6. Asbestos contractor must submit the waste manifest for the asbestos material transported to the asbestos landfill to the Client within ten (10) days following the completion of the abatement.
7. If hidden or inaccessible areas are discovered or suspect materials that were not sampled and not included in the Summary of Findings are identified, then these suspect building materials should be inspected by an IDPH-licensed asbestos inspector to determine if the material contains asbestos prior to any disturbance or shall be assumed to contain asbestos and be abated accordingly.

II. LEAD-BASED PAINT

APPLICABLE REGULATIONS AND STANDARDS

This report was developed in accordance with HUD/EPA standards for lead-based paint. These standards state that painted surfaces are considered lead-based paint if the levels of lead are equal to or greater than 1.0 mg/cm2 or 0.5% (5,000 ppm or 5,000 mg/kg) by weight as defined by Title X of the 1992 Housing and Community Development Act (Title X is also known as the Residential Lead-based Paint Hazard Reduction Act of 1992).

OSHA regulations for worker exposure to lead, 29 CFR 1926.62, requires the employer to determine the presence of lead, provide exposure monitoring, and implementation of the standard. The OSHA regulations state the regulatory limit of airborne exposure or permissible exposure limit (PEL which is a time-weighted average or TWA that a healthy person can be exposed to for 8 hours a day, 40 hours a week and not experience adverse health effects) to lead is 50 µg/m3 with an action level of 30 µg/m3. OSHA requires air monitoring be conducted to determine potential exposure to airborne lead even though the levels of lead in the paint may be below the HUD/EPA standards of 1.0 mg/cm2 or 0.5% (5,000 ppm or 5,000 mg/kg).

The IEPA regulates the emission, discharge, and disposal of lead-based paint waste. IEPA does not currently have specific regulations for the removal of lead-based paint. For disposal purposes, if demolition/construction debris containing lead-based paint is still adhered to the substrate, the waste may be handled as general refuse. In addition, this debris should not be re-used as fill due to the presence of lead and the potential for contamination. However, if the LBP is removed from the original substrate to which it was adhered, then the waste is a special waste and the entire waste stream must be analyzed to determine if it is a hazardous waste as determined by the Toxicity Characteristic Leaching Procedure (TCLP). The handling and disposal of hazardous waste in Illinois must be conducted in accordance with the Resource Conservation and Recovery Act (RCRA) regulations applicable to the activity being conducted.

LEAD-BASED PAINT CONDITION ASSESSMENT

Based on the documents provided by UIUC, the type and quantity of lead-based paint present in the areas proposed to be abated were determined. The ACM in the Illini Union is as follows:

1. Plaster walls – green, white, beige, gray, tan, yellow
2. Wood doors and frames – white, gray
3. Wood windows – white
4. Plaster window – white
5. Wood wall - white

CONCLUSIONS/RECOMMENDATIONS

Various materials were identified as lead-based paint according to HUD/EPA standards. Additional requirements and recommendations include the following:

1. Based on the information provided by the Client, this building is not a child occupied (6 years old or less) facility. However, all work must still be conducted in accordance with OSHA standard, 29 CFR 1926.62, and disposal in accordance with EPA regulations.
    - OSHA requires air monitoring be conducted to determine potential exposure to airborne lead even though the levels of lead in the paint may be below the HUD/EPA standards of 1.0 mg/cm2 or 0.5% (5,000 ppm or 5,000 mg/kg).
    - EPA regulations state that lead-based painted materials that are intact can be disposed of as general construction debris. However, these materials cannot be recycled or re-used.
2. Abatement activities for any amount of lead must be conducted by OSHA trained personnel in accordance with 29 CFR 1926.62 along with other applicable OSHA regulations that includes, but not limited to, respirator protection, medical monitoring, fit testing, etc. and using safe work practices.
3. It is recommended that lead abatement specifications and drawings be developed in the design phase of this project. Specifications should be developed in coordination with other trades and applicable regulations.
4. It is recommended that an IDPH-licensed lead contractor with IDPH-licensed supervisors and workers complying with all state, federal, and local regulations conduct removal of lead-based painted surfaces.
    - If lead paint will be abated from the substrate, place a negative pressure containment following lead safe work practices
    - If the entire substrate is removed, then the removal shall be with no disturbance of the lead paint. If the lead is disturbed, then construct a negative pressure containment with attached decontamination/load-out following safe work practices.
    - It is recommended that project management and air sampling be conducted by an IDPH licensed lead professional during the abatement activities in order to document work activities and lead dust concentrations.
    - Clearance wipe sampling by an IDPH-licensed lead professional should be conducted to document that the lead abatement activities were conducted properly achieving the HUD/EPA clearance criteria and prior to dismantling the containment and re-occupancy.
    - Lead waste shall be disposed of at an IEPA-approved landfill and cannot be re-used or recycled. If the surfaces have deteriorated from its substrate, further characterization (i.e., toxicity characteristic leachate procedure or TCLP) of this waste may be required by the landfill.
    - Metal surfaces containing lead paint in good condition can be recycled at a metal recycling company. It is recommended to notify them of the metal containing lead. Maintain proper documentation verifying this notification to the recycling company and their confirmation of receiving this notification.
5. The contractor, as required by OSHA regulations, shall have a competent person present during the renovation activities in order to determine if lead-based materials not identified in this testing may be encountered or if renovation activities create lead dust requiring modifications to the work practices. All workers and contractors must comply with all applicable federal, state, and local regulations including IDPH, IEPA and OSHA regulations to protect the health and safety of their employees and building occupants.

Environmental Analysis

III. HAZARDOUS MATERIALS

APPLICABLE REGULATIONS AND STANDARDS

The Illinois Environmental Protection Agency (IEPA) and USEPA have regulations for specific hazardous materials that are typically found in commercial buildings that must be disposed of properly. In addition, OSHA and DOT also has specific regulations for the handling and transportation of hazardous materials. This includes fluorescent light bulbs (mercury), ballast (polychlorinated biphenyls or PCBs) and thermostats (mercury). It is assumed that UIUC will remove all miscellaneous chemicals used in the building, such as cleaners and paints, prior to renovation activities.

CONCLUSIONS/RECOMMENDATIONS

Various materials were identified as hazardous materials according to EPA/OSHA standards. Additional requirements and recommendations include the following:

1. All work must still be conducted in accordance with OSHA and EPA standards.

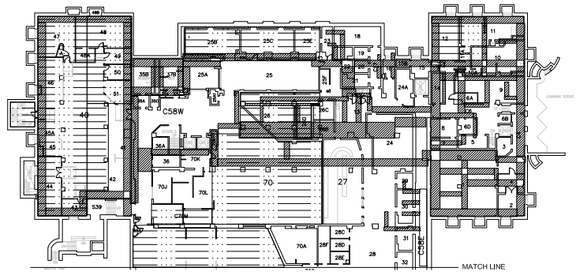
2. Removal activities for any amount of hazardous material must be conducted by OSHA trained personnel along with other applicable OSHA regulations that includes, but not limited to, respirator protection, medical monitoring, fit testing, etc. and using safe work practices.

3. It is recommended that specifications and drawings be developed in the design phase of this project. Specifications should be developed in coordination with other trades and applicable regulations.

4. The contractor, as required by OSHA regulations, shall have a competent person present during the renovation activities in order to determine if other hazardous materials not identified in this report may be encountered or if renovation activities create a hazard requiring modifications to the work practices. All workers and contractors must comply with all applicable federal, state, and local regulations including IDPH, IEPA and OSHA regulations to protect the health and safety of their employees and building occupants.

Environmental Analysis

ACM Locations



LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON STEAM SUPPLY AND RETURN, REFRIGERATED WATER FEED & RETURN, HOT WATER, FIRE LINES, DRINKING WATER, 1957 CONDENSOR LINE ADDITION, COLD SOFT WATER, CHILLED WATER SUPPLY & RETURN, COOLING TOWER SOFT WATER, ABANDONED COLD WATER, STEAM VENT, ORIGINAL CONDENSER, CHILLED WATER SUPPLY & RETURN, COOLING TOWER SOFT WATER, PUMP DISCHARGE, SANITARY, STEAM VENT, COLD WATER, ABANDONED COLD WATER, AND INACCESSIBLE LINES (INCLUDES VENT, ROOF DRAIN/DOWNSPOUT, COOLING TOWER WASTE LINES AND CHILLED WATER SUPPLY AND RETURN)

HOMOGENEOUS AREAS: TJA, TJB, TJC, TJD, TJE, TJF, TJG, TJH, TJI, TJJ, TJK, TJL, TJZ, TJAA, TJAB, TJAC, TJAD, TJAE, TJAF, TJAG, TPA, TPC, TPD, TPE, TPF, TPG, TPH, TPI, TPJ, TPK, TPL, TPZ, TPAA, TPAB, TPAC, TPAD, TPAE, TPAF, TPAG, TJY, TPY, TJZ, TPZ

ACM MISCELLANEOUS MATERIALS - CARPET MASTIC, COVE BASE MASTIC, RUBBER FLOOR COVERING MASTIC, MASTIC FOR CORK-LIKE CEILING MATERIAL, 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, VINYL SHEET FLOOR COVERING AND MASTIC, 18" X 18" RESILIENT FLOOR TILE AND MASTIC, ELEVATOR BRAKE PADS, TRANSITE WALLBOARD, AND GLAZING AROUND ALL WINDOWS

HOMOGENEOUS AREAS: MMA, MMB, MMC, MME, MFA, MFB, MFC, MFD, MMK, MTA

ORIGINAL BUILDING - NORTH
SCALE: 1/32"= 1'-0"

NOTE/DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U10041) DATED JANUARY 29, 2016).

DATE	REVISIONS

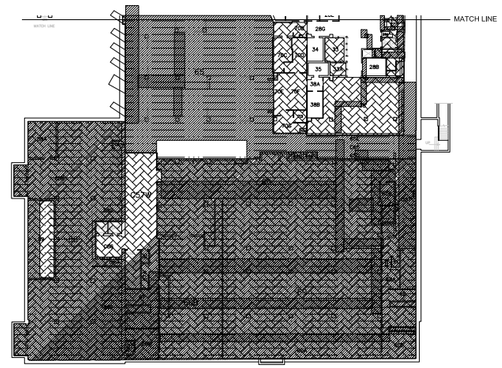
UIUC PROJECT: U16056
SCALE: 1/32" = 1'-0"
DATE:
LAYOUT KDE
DRAWN KDE
REVIEWED SDO

DAS CONSULTING SERVICES, LLC
5701 Cedar Ridge, Springfield, Illinois 62707 (217) 306-6168 Website: www.das-cs.com

The University of Illinois at Urbana-Champaign

ACM LOCATIONS - BASEMENT (NORTH)
ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE: JANUARY 31, 2017
SHEET NUMBER: ASB-BN



LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON DUCT SHAFT, STEAM SUPPLY AND RETURN, CHILLED WATER SUPPLY AND RETURN, DRINKING WATER, COLD WATER, HOT WATER, CHILLED SOFT WATER, SANITARY, PUMP DISCHARGE, ROOF DRAINDOWNSPOUT, CONDENSER SUPPLY AND RETURN, HEATING HOT WATER RETURN AND SUPPLY, ABANDONED LINES, AND HOT WATER STORAGE TANK

HOMOGENEOUS AREAS: TDC, TJM, TJN, TJO, TJP, TJQ, TJR, TJS, TJT, TJU, TJV, TJW, TJX, TJAF, TJAH, TJAI, TPB, TPM, TPN, TPO, TPP, TPQ, TPR, TPS, TPT, TPU, TPV, TPW, TPX, TPAF, TPAH, TTA

ACM MISCELLANEOUS MATERIALS - 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, VINYL SHEET FLOOR COVERING AND MASTIC, AND 18" X 18" RESILIENT FLOOR TILE AND MASTIC, CARPET MASTIC, TRANSITE WALLBOARD, AND GLAZING AROUND ALL WINDOWS

HOMOGENEOUS AREAS: MFA, MFB, MFC, MFD, MMA, MTA, MMK

ACM SURFACING MATERIAL - SPRAY-ON FIREPROOFING ON I-BEAMS AND OTHER SUBSTRATES

HOMOGENEOUS AREA: SFB

NOTE: ALL THREE TYPES OF ACM IDENTIFIED THROUGHOUT THE SOUTH ADDITION FIRST FLOOR.

1960'S ADDITION - SOUTH
SCALE: 1/32"= 1'-0"

NOTE/DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U10041) DATED JANUARY 29, 2016).

DATE	REVISIONS

UIUC PROJECT: U16056
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DAS CONSULTING SERVICES, LLC
5701 Cedar Ridge, Springfield, Illinois 62707 (217) 306-6168 Website: www.das-cs.com

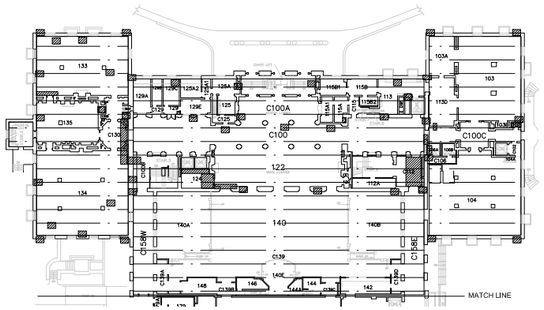
The University of Illinois at Urbana-Champaign

ACM LOCATIONS - BASEMENT (SOUTH)
ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE: JANUARY 31, 2017
SHEET NUMBER: ASB-BS

Environmental Analysis

ACM Locations



LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON STEAM SUPPLY AND RETURN, REFRIGERATED WATER FEED, HOT WATER, FIRE LINES, DRINKING WATER, SOFT WATER, ORIGINAL CONDENSER, SANITARY, COLD WATER, AND INACCESSIBLE LINES (INCLUDES VENT, ROOF DRAIN/DOWNSPOUT, COOLING TOWER WASTE LINES AND CHILLED WATER SUPPLY AND RETURN)

HOMOGENEOUS AREAS: TJA, TJC, TJD, TJE, TJF, TJG, TJI, TJAA, TJAB, TJAD, TJAE, TPA, TPC, TPD, TPE, TPF, TPG, TPI, TPAA, TPAB, TPAD, TPAE, TJY, TPY

ACM MISCELLANEOUS MATERIALS - CARPET MASTIC, COVE BASE MASTIC, RUBBER FLOOR COVERING MASTIC, FIRE DOORS, 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, AND VINYL SHEET FLOOR COVERING AND MASTIC

HOMOGENEOUS AREAS: MMA, MMB, MMC, MMI, MFA, MFB, MFC

ORIGINAL BUILDING - NORTH
SCALE: 1/32"= 1'-0"

NOTE/DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U10041) DATED JANUARY 29, 2016).

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DAS CONSULTING SERVICES, LLC
6701 Carlin Ridge, Springfield, Illinois 62707 (217) 698-8100 Website: www.das-cs.com

The University of Illinois at Urbana-Champaign

ACM LOCATIONS - FIRST FLOOR (NORTH)
ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE:
JANUARY 31, 2017
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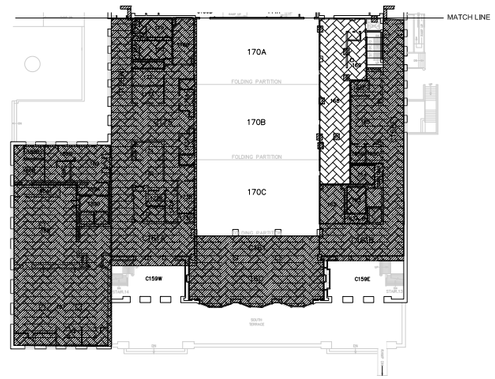

LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON DUCT SHAFT, STEAM SUPPLY AND RETURN, CHILLED WATER SUPPLY AND RETURN, DRINKING WATER, COLD WATER, HOT WATER, CHILLED SOFT WATER, SANITARY, ROOF DRAIN/DOWNSPOUT, CONDENSER SUPPLY AND RETURN, HEATING HOT WATER SUPPLY AND RETURN, AND ABANDONED LINES.

HOMOGENEOUS AREAS: TDC, TJM, TJN, TJO, TJP, TJQ, TJR, TJS, TJT, TJU, TJV, TJW, TJX, TJAF, TJAH, TJAI, TPN, TPO, TPF, TPQ, TPR, TPS, TPT, TPU, TPV, TPW, TPX, TPAF,

ACM MISCELLANEOUS MATERIALS - CARPET MASTIC, COVE BASE MASTIC, 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, ELEVATOR BRAK PADS, AND GLAZING AROUND ALL WINDOWS

HOMOGENEOUS AREAS: MMA, MMB, MFA, MFB

ACM SURFACING MATERIAL - SPRAY-ON FIREPROOFING ON I-BEAMS AND OTHER SUBSTRATES

HOMOGENEOUS AREA: SFB

NOTE: ALL THREE TYPES OF ACM IDENTIFIED THROUGHOUT THE SOUTH ADDITION FIRST FLOOR.

1960'S ADDITION - SOUTH
SCALE: 1/32"= 1'-0"

NOTE/DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U10041) DATED JANUARY 29, 2016).

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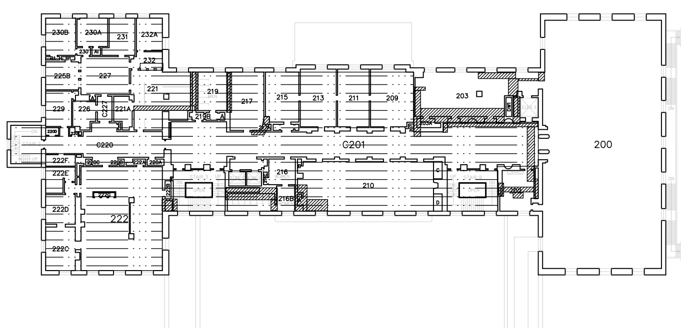
DAS CONSULTING SERVICES, LLC

The University of Illinois at Urbana-Champaign

ACM LOCATIONS - FIRST FLOOR (SOUTH)
ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE:
JANUARY 31, 2017
SHEET NUMBER
ASB-1S



LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON STEAM SUPPLY AND RETURN, REFRIGERATED WATER FEED, HOT WATER, FIRE LINES, DRINKING WATER, SOFT WATER, ORIGINAL CONDENSER, PUMP DISCHARGE, SANITARY, COLD WATER, CHILLED WATER, STEAM VENT, AND INACCESSIBLE LINES (INCLUDES VENT, ROOF DRAIN/DOWNSPOUT, COOLING TOWER WASTE LINES AND CHILLED WATER SUPPLY AND RETURN)

HOMOGENEOUS AREAS: TJA, TJB, TJC, TJD, TJE, TJF, TJG, TJH, TJI, TJJ, TJAA, TJAB, TJAD, TJAE, TPA, TPC, TPD, TPE, TPF, TPG, TPH, TPI, TPJ, TPAA, TPAB, TPAD, TPAE, TJY, TPY, TPZ

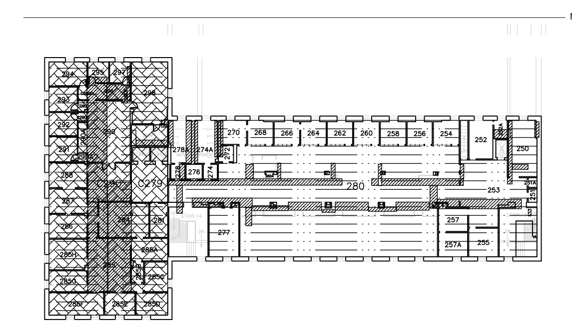
ACM MISCELLANEOUS MATERIALS - CARPET MASTIC, COVE BASE MASTIC, RUBBER FLOOR COVERING MASTIC, FIRE DOORS, 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, VINYL SHEET FLOOR COVERING AND MASTIC, ELEVATOR BRAKE PADS, AND GLAZING AROUND ALL WINDOWS

HOMOGENEOUS AREAS: MMA, MMB, MMC, MFB, MMK

ORIGINAL BUILDING - NORTH
SCALE: 1/32"= 1'-0"

NOTE: DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U15041) DATED JANUARY 29, 2016).

DATE	REVISIONS					
		UIUC PROJECT: U16058 SCALE: 1/32" = 1' 0" DATE: LAYOUT KDE DRAWN KDE REVIEWED SDO	DAS CONSULTING SERVICES, LLC	The University of Illinois at Urbana-Champaign	**ACM LOCATIONS - SECOND FLOOR (NORTH)** ILLINI UNION - FACILITY STUDY 1401 WEST GREEN STREET URBANA, ILLINOIS 61801	SUBMITTAL DATE: JANUARY 31, 2017 SHEET NUMBER ASB-2N



LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON DUCT SHAFT, STEAM SUPPLY AND RETURN, CHILLED WATER SUPPLY AND RETURN, DRINKING WATER, COLD WATER, HOT WATER, CHILLED SOFT WATER, SANITARY, ROOF DRAIN/DOWNSPOUT, CONDENSER SUPPLY AND RETURN, ABANDONED PIPES, HATING HOT WATER SUPPLY AND RETURN.

HOMOGENEOUS AREAS: TDC, TJM, TJN, TJO, TJP, TJQ, TJR, TJS, TJT, TJU, TJV, TJW, TJX, TJAF, TJAH, TJAI, TPM, TPN, TPO, TPP, TPQ, TPR, TPS, TPT, TPU, TPV, TPW, TPX, TPAF, TPAH, TPAI

ACM MISCELLANEOUS MATERIALS - CARPET MASTIC, COVE BASE MASTIC, 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, FIRE DOORS, ELEVATOR BRAKE PADS, AND GLAZING AROUND ALL WINDOWS.

HOMOGENEOUS AREAS: MMA, MMB, MFA, MFB, MMI, MMK

ACM SURFACING MATERIAL - SPRAY-ON FIREPROOFING ON I-BEAMS AND OTHER SUBSTRATES

HOMOGENEOUS AREA: SFB

NOTE: ALL THREE TYPES OF ACM IDENTIFIED THROUGHOUT THE SOUTH ADDITION.

1960'S ADDITION - SOUTH
SCALE: 1/32"= 1'-0"

NOTE: DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U15041) DATED JANUARY 29, 2016).

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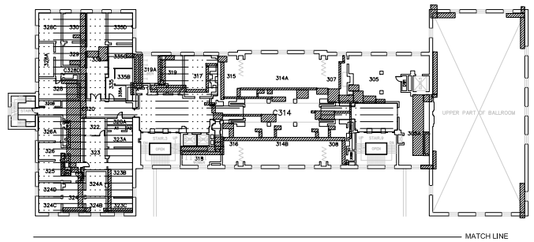
		UIUC PROJECT: U16058 SCALE: 1/32" = 1' 0" DATE: LAYOUT KDE DRAWN KDE REVIEWED SDO	DAS CONSULTING SERVICES, LLC	The University of Illinois at Urbana-Champaign	**ACM LOCATIONS - SECOND FLOOR (SOUTH)** ILLINI UNION - FACILITY STUDY 1401 WEST GREEN STREET URBANA, ILLINOIS 61801	SUBMITTAL DATE: JANUARY 31, 2017 SHEET NUMBER ASB-2S

Environmental Analysis

ACM Locations



LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON STEAM SUPPLY AND RETURN, REFRIGERATED WATER FEED, HOT WATER, FIRE LINES, DRINKING WATER, SOFT WATER, ORIGINAL CONDENSER, PUMP DISCHARGE, SANITARY, COLD WATER, CHILLED WATER, STEAM VENT, AND INACCESSIBLE LINES (INCLUDES VENT, ROOF DRAIN/DOWNSPOUT, COOLING TOWER WASTE LINES AND CHILLED WATER SUPPLY AND RETURN)

HOMOGENEOUS AREAS: TJA, TJB, TJC, TJD, TJE, TJF, TJG, TJH, TJI, TJJ, TJAA, TJAB, TJAD, TJAE, TPA, TPC, TPD, TPE, TPF, TPG, TPH, TPI, TPAA, TPAB, TPAD, TPAE, TJY, TPY, TPZ

ACM MISCELLANEOUS MATERIALS - CARPET MASTIC, COVE BASE MASTIC, RUBBER FLOOR COVERING MASTIC, 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, ELEVATOR BRAK PADS, AND GLAZING AROUND ALL WINDOWS

HOMOGENEOUS AREAS: MMA, MMB, MMC, MFA, MFB, MMK

ORIGINAL BUILDING - NORTH
SCALE: 1/32"= 1'-0"

NOTE/DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U15041) DATED JANUARY 29, 2016).

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UIUC PROJECT: U16056
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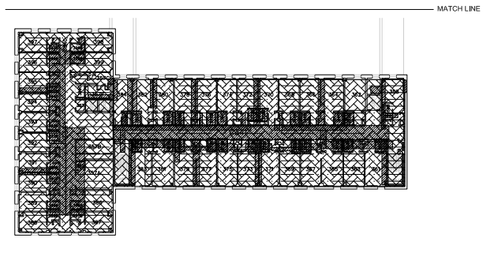
LAYOUT KDE
DRAWN KDE
REVIEWED SDO

DAS CONSULTING SERVICES, LLC
1701 Cedar Ridge, Springfield, Illinois 62707 (217) 546-6168 Website: www.das-cs.com

The University of Illinois at Urbana-Champaign

ACM LOCATIONS - THIRD FLOOR (NORTH)
ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE: JANUARY 31, 2017
SHEET NUMBER: ASB-3N



LEGEND

ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON DUCT SHAFT, STEAM SUPPLY AND RETURN, CHILLED WATER SUPPLY AND RETURN, DRINKING WATER, COLD WATER, HOT WATER, CHILLED SOFT WATER, SANITARY, PUMP DISCHARGE, ROOF DRAIN/DOWNSPOUT, CONDENSER SUPPLY AND RETURN, ABANDONED PIPES, AND HEATING HOT WATER.

HOMOGENEOUS AREAS: TDC, TJAH, TJAI, TJM, TJO, TJP, TJQ, TJR, TJS, TJT, TJU, TJV, TJW, TJX, TJAF, TJAH, TJAJ, TPM, TPO, TPP, TPQ, TPR, TPS, TPT, TPU, TPV, TPW, TPX, TPY, TPAF, TPAH, TPAI

ACM MISCELLANEOUS MATERIALS - 12" X 12" FLOOR TILE AND MASTIC, CARPET MASTIC, COVE BASE MASTIC, ELEVATOR BRAKE PADS, AND GLAZING AROUND ALL WINDOWS

HOMOGENEOUS AREAS: MFB, MMA, MMB, MMK

ACM SURFACING MATERIAL - SPRAY-ON FIREPROOFING ON I-BEAMS AND OTHER SUBSTRATES

HOMOGENEOUS AREA: SFB

NOTE: ALL THREE TYPES OF ACM IDENTIFIED THROUGHOUT THE SOUTH ADDITION.

1960'S ADDITION - SOUTH
SCALE: 1/32"= 1'-0"

NOTE/DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U15041) DATED JANUARY 29, 2016).

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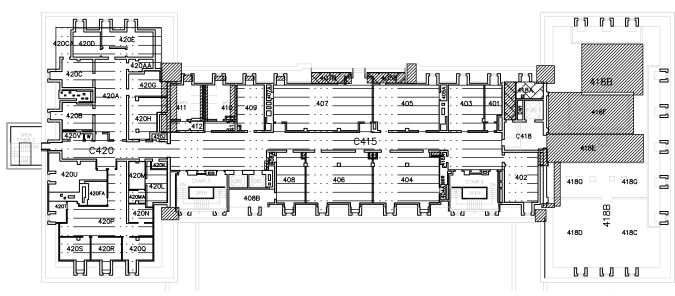
DAS CONSULTING SERVICES, LLC
1701 Cedar Ridge, Springfield, Illinois 62707 (217) 546-6168 Website: www.das-cs.com

The University of Illinois at Urbana-Champaign

ACM LOCATIONS - THIRD FLOOR (SOUTH)
ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE: JANUARY 31, 2017
SHEET NUMBER: ASB-3S

LEGEND	
(diagonal hatch)	ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON STEAM SUPPLY AND RETURN, REFRIGERATED WATER FEED, HOT WATER, FIRE LINES, DRINKING WATER, SOFT WATER, ORIGINAL CONDENSER, PUMP DISCHARGE, SANITARY, COLD WATER, CHILLED WATER, STEAM VENT, AND INACCESSIBLE LINES (INCLUDES VENT, ROOF DRAIN/DOWNSPOUT, COOLING TOWER WASTE LINES AND CHILLED WATER SUPPLY AND RETURN) HOMOGENEOUS AREAS: TJA, TJB, TJC, TJE, TJF, TJG, TJH, TJI, TJJ, TJAA, TJAB, TJAD, TJAE, TPA, TPC, TPD, TPE, TPF, TPG, TPH, TPI, TPAA, TPAB, TPAD, TPAE, TJY, TPY, TPZ
(dash-dot lines)	ACM MISCELLANEOUS MATERIALS - 12" X 12" FLOOR TILE AND MASTIC, 9" X 9" FLOOR TILE AND MASTIC, CARPET MASTIC, COVE BASE MASTIC, RUBBER FLOOR COVERING MASTIC, BLACK WATER PROOFING COMPOUND UNDER AIR HANDLERS (MECH ROOM 418), FIRE DOORS, ELEVATOR BRAKE PADS, AND GLAZING AROUND ALL WINDOWS HOMOGENEOUS AREAS: MFA, MFB, MMA, MMB, MMC, MMF, MMI, MMK
(crosshatch)	ACM SURFACING MATERIAL - SPRAY-ON FIREPROOFING ON UNDERSIDE OF ROOF, ORIGINAL 1930s HOMOGENEOUS AREA: SFA
	NOTE: ALL THREE TYPES OF ACM IDENTIFIED THROUGHOUT THE SOUTH ADDITION FIRST FLOOR.



ORIGINAL BUILDING - NORTH
SCALE: 1/32"= 1'-0"

NOTE: DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U15041) DATED JANUARY 29, 2016).

DATE	REVISIONS	
		UIUC PROJECT: U16058
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		REVIEWED SDO

DAS CONSULTING SERVICES, LLC

The University of Illinois at Urbana-Champaign

ACM LOCATIONS-FOURTH FLOOR (NORTH)

ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE: JANUARY 31, 2017
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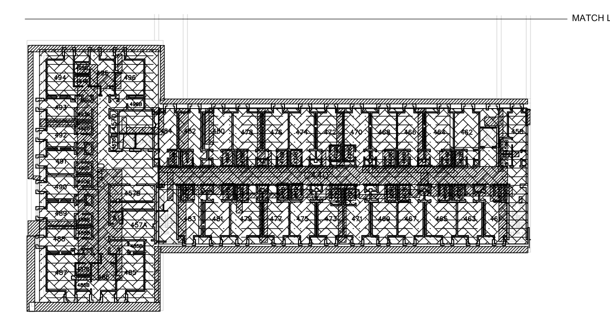
ASB-4N



LEGEND	
(diagonal hatch)	ACM THERMAL SYSTEM INSULATION - PIPE INSULATION AND CEMENTITIOUS FITTINGS ON DUCT SHAFT, STEAM SUPPLY AND RETURN, CHILLED WATER SUPPLY AND RETURN, DRINKING WATER, COLD WATER, HOT WATER, CHILLED SOFT WATER, SANITARY, ROOF DRAIN/DOWNSPOUT, CONDENSER SUPPLY AND RETURN, ABANDONED PIPES, AND HEATING HOT WATER SUPPLY AND RETURN. HOMOGENEOUS AREAS: TDC. TJAH, TJAI, TJM, TJO, TJP, TJQ, TJR, TJS, TJT, TJU, TJV, TJW, TJX, TJAF, TJAH, TJAI, TPM, TPO, TPP, TPQ, TPR, TPS, TPT, TPU, TPV, TPW, TPX, TPY, TPAF, TPAH, TPAI
(dash-dot lines)	ACM MISCELLANEOUS MATERIALS - 12" X 12" FLOOR TILE AND MASTIC, CARPET MASTIC, COVE BASE MASTIC, ELEVATOR BRAKE PADS, AND GLAZING AROUND ALL WINDOWS HOMOGENEOUS AREAS: MFB, MMA, MMB, MMK
(crosshatch)	ACM SURFACING MATERIAL - SPRAY-ON FIREPROOFING ON I-BEAMS AND OTHER SUBSTRATES HOMOGENEOUS AREA: SFB
	NOTE: ALL THREE TYPES OF ACM IDENTIFIED THROUGHOUT THE SOUTH ADDITION.

1960'S ADDITION - SOUTH
SCALE: 1/32"= 1'-0"

NOTE: DRAWING IS BASED ON PREVIOUS SAMPLING REPORTS (ASBESTOS MANAGEMENT PLAN DATED MAY 10, 2003 AND FACILITY CONDITION AUDIT (U15041) DATED JANUARY 29, 2016).

DATE	REVISIONS	
		UIUC PROJECT: U16058
		SCALE: 1/32" = 1' 0"
		DATE:
		LAYOUT KDE
		DRAWN KDE
		REVIEWED SDO

DAS CONSULTING SERVICES, LLC

The University of Illinois at Urbana-Champaign

ACM LOCATIONS-FOURTH FLOOR (SOUTH)

ILLINI UNION - FACILITY STUDY
1401 WEST GREEN STREET
URBANA, ILLINOIS 61801

SUBMITTAL DATE: JANUARY 31, 2017
SHEET NUMBER
ASB-4S

Technology Analysis

Technology Analysis

Structured Cabling Systems

STANDARDS AND COMPLIANCE

Systems will be designed to include all labor, equipment, supplies and materials for the complete installation of fully functional structured cabling systems. Design will include the following, as well as work not listed below but described elsewhere as it applies to all structured cabling systems:

1. Raceway
2. Cabling
3. Equipment Racks and Cabinets
4. Patch panels and connectivity
5. Work area outlets and connectivity
6. Systems Testing
7. Documentation and submissions
8. Warranty and Service

Structured cabling systems will comply with University of Illinois Facility Standards, as well as recognized industry design standards. The design will meet or exceed the following standards and procedures:

1. National Fire Protection Association (NFPA): NFPA 70, NFPA 72, NFPA 90A
2. National Electrical Code (NEC)
3. American National Standards Institute (ANSI/EIA/TIA)
4. 568-C.0 Generic Telecommunications Cabling for Customer Premise
5. 568-C.1 Commercial Building Telecommunications Cabling Standard
6. 568-C.2 Balanced Twisted Pair Telecommunications Cabling and Component Standard
7. 568-C.3 Optical Fiber Cabling Components Standard.
8. 569-B Commercial Building Standard for Telecommunications Pathways and Spaces
9. 598-B Commercial Building Standard for Telecommunications Optical Fiber Cable Color Coding.
10. 606-A Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.
11. 607 Commercial Buildings Grounding (Earthing) and Bonding Requirements for Telecommunications
12. 758-A Customer Owned Outside Plant Telecommunications Cabling Standard.
13. TSB-67 Performance Specifications for Field Testing of Unshielded Twisted Pair Cabling Systems.

All work shall meet or exceed the standards and procedures of the following:

1. National Fire Protection Association (NFPA)
2. National Electrical Code (NEC)
3. American National Standards Institute (ANSI)
4. National Electrical Manufacturers Association (NEMA)
5. American Society of Testing Materials (ASTM)
6. Institute of Electronic & Electrical Engineers (IEEE
7. Underwriters Laboratory (UL)
8. Americans With Disabilities Act (ADA)

Applicable State and Local codes shall also be followed.

SYSTEM REQUIREMENTS SHALL INCLUDE THE FOLLOWING

1. The existing incoming duct bank and service feeding the south wing of the Union will remain and continue to provide phone and data services to the south wing of the Union.
2. A new vertical backbone will be required between the basement communications equipment room in the south wing and all communication equipment rooms on the upper floors of the south wing.
3. Modifications will be required to the horizontal cabling systems fed from the south wing communication rooms. In some applications, telecommunications outlets in the Courtyard and north wing are fed from communication equipment rooms in the south wing. Telecommunications outlets in the north wing will need to be re-routed from rooms in the north wing. Outlets in the courtyard will need to be demolished prior to the start of demolition.
4. The existing incoming phone and data service entering into the south wing acts as the only phone and data service for the building. From the south wing the service extends through the courtyard to the north wing. Demolition of the courtyard will result in a disruption of service to the north wing. As a result, a second duct bank and service will be required for the north wing allowing phone and data services to remain functional during the demolition and remodel of the Courtyard. The new duct bank would extend from the existing node located south of the Union, traveling along the west side of the building and entering into the basement of the north wing. Service will continue to and terminate in the existing communications equipment room located in the basement of the north wing.
5. Similar to the south wing, modifications will be required of the north wing cabling systems. Vertical backbone will be reviewed and modified as needed to assure phone and data services are available to all

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floors.

6. As noted previously, horizontal cabling routing will be reviewed. Telecommunications outlets in the north wing that are fed from rooms outside the north wing will be re-routed. Outlets outside of the north wing that are fed from north wing rooms will be re-routed and or demolished prior to the start of the courtyard demolition.
7. Effort will be made to revise the quantity and location of telecommunications closets. When new construction permits, vertically stacked closets are required on all floors. The closets will be sized based on the square footage of floor space served. Existing closets that are required to remain will be evaluated and upgraded with sufficient HVAC cooling and clean power. Additional modifications should include the following:
8. a. Net Pop – Relocate from the existing mechanical room. Create a dedicated closet in a secure location.
    - Hub A – Relocate from the kitchen area. Create a new dedicated closet in a secure location less prone to flooding.
    - Hub B – Upgrade the HVAC and infrastructure for this space to current industry standard. Increase the number and capacity of conduit sleeves into the space. Provide new equipment rack for support of new cable terminations.
    - Hub D - Upgrade the HVAC and infrastructure for this space to current industry standard.
    - Server Room – It is recommended that the existing hotel phone system be relocated from this room to the south wing. Doing so will free up space for future cabling needs to the surrounding area served by this room.
    - Create new closets on all floors of the new courtyard building.
9. Throughout the design process a thorough evaluation of all horizontal cabling needs will be required. Input from user groups for all spaces will be considered and an appropriate number of telecommunications outlets will be provided for support of the confirmed services.
10. In addition to hardwired cabling needs, a wireless survey of the facility is required for the development of a wireless network that is capable of provide sufficient coverage throughout the facility. In addition to the physical restrictions that may impact the system, consideration will be given to the anticipated number of users and the number of network nodes required to support the corresponding bandwidth.
11. The existing hotel phone system head end is located in the north wing and cabling routes through the courtyard to the south wing. Prior to the start of demolition of the courtyard, it is recommended that the head end be relocated to a secure closet in the south wing. In addition to minimizing the disruption of the system, future servicing will be simplified by having the head end in the same general area of the building as the spaces served. As part of the relocation, it is recommended that all cabling serving the hotel guest rooms be upgraded to a standards compliant Category 6e cabling system.
12. Existing telecommunications pathways will be inspected and if found to be acceptable will be reused. Use of the existing pathways are dependent upon the volume of the pathway being sufficient for new cabling.
13. Telecommunications Raceway Systems – Conduit required for support of telecommunications outlets shall consist of a two gang back box with one gang trim ring and 1” conduit stub above accessible ceiling. J-Hooks shall be used to support cable between stub and cable tray. Cable tray of sufficient size will be located in primary corridors, extending back to the telecommunications closet. Additional conduit pathways will be provided for support of back bone cabling between closets. Wireless access points require a two gang outlet box with single gang trim ring.
14. Telecommunications Grounding Network – A standards compliant telecommunications grounding network is required for all new closets. Ground conductors will be extended from the main grounding bus bar. Additional telecommunications grounding bus bars are required in all subsequent telecommunications closets. Bonding conductors are required between all bus bars, as well as the facilities main ground. Bonding conductors are required between each bus bar and the following-
    - Telecommunications equipment racks/cabinets
    - Building steel
    - Local distribution panel
    - Cable tray
    - Communications conduits and sleeves
    - Building entrance surge protection
15. Ground conductors shall be sized based on ANSI-J-STD-607A
16. Telecommunications Closets – Telecommunications closets will be required on all floors. The closets will be dedicated spaces and will be void of mechanical, plumbing, and general electrical services. It is preferred that all closets following industry standard and be stacked vertically, be centrally located, and placed off primary corridors. Care shall be taken to avoid placement adjacent to or beneath water closets or restrooms. Minimum closet dimensions shall be 10’x9’. If allowed by code, the door shall swing outward into the corridor. A minimum of two walls shall be covered with fire treated ¾” plywood back board.

Back board shall consist of 4'x8'sheets mounted vertically beginning at 8" aff. Ladder type cable tray is required in closets and shall be installed above equipment racks extending throughout the room wherever backbone and -horizontal cable pathways enter. The University will be consulted on the placement and layout of all closets. The quantity of racks will vary based on the amount of connectivity terminated in the closet. Consideration will be given for future expansion and the amount of available rack space will accommodate future needs. All racks will be equipped with cable management to support vertical and horizontal cabling.

17. Backbone Cabling – Backbone cabling shall be comprised of fiber optic and copper cable. New inter-building fiber optic cabling for the north wing shall consist of single and multi-mode (62.5/125) Corning fiber optic cables. A minimum of 48 strands of each is required. Upon entering the building, cable will terminate to wall mount cross connect. Single and multi-mode cable will extend to the north wing main telecommunications room equipment rack where it will terminate to rack mounted fiber optic patch panels. Intra-building fiber optic cabling for both the north, south, and new courtyard wings is comprised of a minimum of 12 strand multimode (50/125 micron laser optimized) and 12 stand single mode fiber. The intra-building fiber optic network will extend in a star configuration between the main telecommunications closet and all distribution closets.
18. Copper inter-building cabling for the north wing shall be armored direct bury cable with 300 pair count. Copper cable will terminate to wall mount surge protection upon entering the building. Riser cable will then extend to BIX cross connects system in the main distribution closet. The intra-building copper riser will extend in a star configuration between the main telecommunications closet cross connect and all distribution closets. Minimum of 100 pair cable per closet is required for vertical riser.
19. Horizontal Cabling – Category 6e performance standards shall be followed for the horizontal cabling system. Cabling products shall comply with Campus standards. A minimum of two station cables shall be provided for each telecommunications outlet. Quantity and location of telecommunications outlets will be reviewed throughout the design process. Additional consideration will be given to telecommunications outlets for the following spaces-
    - Hallways – Telecommunications cabling for support of copiers, house and emergency phones, digital signage and wireless internet.
    - Classrooms – Minimum telecommunications cabling shall include support of house phone, lectern, and wireless internet. Depending on the specific use of the space, additional cabling shall be. (i.e., one drop per workstation in computer labs).
    - Offices – Telecommunications cabling for phone and data.
    - Waiting/Reception – Telecommunications cabling for digital signage.
    - Conference/Meeting Spaces – Telecommunications cabling for conference or desk phone and data connection.
    - File/Print Spaces – Telecommunications cabling for fax, printer, and copier.
    - Electrical/Mechanical – Telecommunications cabling for building management and monitoring systems.
    - Elevator Control Locations – Telecommunications cabling for POTS line.
    - Fire Alarm Control Location – Telecommunications cabling for POTS line.
    - Building Exterior – Telecommunications cabling for emergency phones and wireless internet.
20. The facilities CATV distribution system will be expanded. Existing trunk lines will be extended to new telecommunications closets. New closets will be equipped with a two way distribution amplifier, splitter, and tap offs. CATV outlet locations will be identified in the design process with input from the users. Each drop requires a dedicated home run back to the nearest telecommunications closet.
21. Patch panels will be modular, 48 port capacity. Add 25% additional capacity.
22. Patch cables of sufficient length and quantity shall be included.
23. A minimum 20 year Cat-6e cabling warranty is required.

Technology Analysis

Security Electronics

STANDARDS AND COMPLIANCE

Systems will be designed to include all labor, equipment, supplies and materials for the complete installation of fully functional security systems. Design will include the following, as well as work not listed below but described elsewhere as it applies to all security systems:

1. Raceway
2. Access control, alarm, CCTV, and intercom/paging cabling
3. Equipment Racks and Cabinets
4. Source and head-end equipment
5. Field devices
6. Grounding and Surge Protection
7. Systems Testing
8. Documentation and submissions
9. Maintenance and Service

Security Electronics systems will comply with University of Illinois Facility Standards, as well as recognized industry design standards. The design will meet or exceed the following standards and procedures:

1. All work shall conform to the National Electrical Code (NEC) and to applicable National Fire Protection Association (NFPA) codes.
2. All work shall conform to all Federal, State and local ordinances.
3. Where applicable, all fixtures, equipment and materials shall be as approved or listed by the following:
    - Factory Mutual Laboratories (FM).
    - Underwriters Laboratories, Inc. (UL).
    - National Electrical Manufacturers Association (NEMA).
4. References to the National Electrical Code and National Fire Protection Association (NFPA) are a minimum installation requirement standard. Design drawings and specification sections shall govern in those instances where requirements are greater than those specified in the NEC and NFPA.
5. All material and equipment shall be listed, labeled or certified by Underwriters' Laboratories, Inc. where such standards have been established. Equipment and material which are not covered by UL Standard will be accepted provided equipment and material are listed, labeled, certified or otherwise determined to meet safety requirements of a nationally recognized testing laboratory. Equipment of a class, which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe will be considered, if inspected or tested in accordance with national industrial standards such as NEMA, ICEA or ANSI. Evidence of compliance shall include certified test reports and definitive shop drawings. NOTE: It is not required that the final installed system be UL listed as a single product.
6. All work shall meet or exceed the standards and procedures of the following:
    - National Fire Protection Association (NFPA): NFPA 70, NFPA 72, NFPA 90A
    - National Electrical Code (NEC)
    - American National Standards Institute (ANSI)
    - National Electrical Manufacturers Association (NEMA)
    - American Society of Testing Materials (ASTM)
    - Institute of Electronic & Electrical Engineers (IEEE)
    - Underwriters Laboratory (UL)
    - Americans With Disabilities Act (ADA)
    - Include all items of labor and material required to comply with such standards and codes. Where quantity, sizes or other requirements indicated on the drawings or herein specified are in excess of the standard or code requirements, the specifications or drawings, respectively, shall govern

Applicable State and Local codes shall also be followed.

SYSTEM REQUIREMENTS SHALL INCLUDE THE FOLLOWING

1. Infrastructure – All security electronics systems cabling shall be installed in conduit from the field device to the secured equipment room. The facilities cable tray will not be used for security electronics systems cabling. Conduit raceway system shall include back boxes, junction boxes, and mortar boxes for all access control and CCTV devices. Conduit size shall allow for a maximum conductor fill of 40% in accordance with NEC guidelines.
2. Grounding – Grounding network specified as part of the structured cabling system shall be used for grounding of the security electronics systems. Surge protection shall be provided on all exterior devices. Ground circuitry will be required for dissipation of lightning, voltage surges, and transients. All security electronics systems will require un-interruptible power supply (UPS) backup. 3. Access Control System (General Building) – A complete access control system shall be provided. The system shall be manufactured by Lenel in accordance with the current standard for the building. The system will interface with existing access control systems allowing for remote programming, configuration, and monitoring. Networked controllers will be located in telecommunications closets. System will control locking devices for architectural doors. Access control system will interface with

handicap accessible doors when applicable. A valid card read unlocks the door, then activates the automatic opener. When the building is secure, the system deactivates the paddle. Proximity cards are owner furnished. Card enrollment is the responsibility of the owner/user. Provide programming that integrates control of devices indicated in the project documents. Access control will provide for group and individual remote release function. Provide Access Control operating software for user initiated modifications to the access control system. Doors requiring control will be identified though out the design process with input from the various user groups.

3. Access Control (Hotel) – No modifications are planned for the access control system specific to the hotel.
4. CCTV System – A new visual surveillance system shall be provided and administered by University Tech Services. The system shall comply with current University standards. The system shall be comprised of networked cameras. Category 6e cabling will be utilized throughout for the camera system. Cameras will be high resolution mega pixel, low profile vandal proof cameras intended for both indoor and outdoor use. Fixed color cameras will be utilized with Wide Dynamic Range capability. Video monitoring of all cameras will be available at campus Police. Camera quantities and locations will be reviewed with all users throughout the design process. At a minimum coverage of the following areas will be considered-
    - Public entrances/exits
    - Point of sale locations for restaurant and retail establishments owned by the University.
    - Underground Parking
        - Vehicle entrance/exit
        - Patron entrance/exit
5. Restaurant and retail establishments owned and operated by outside vendors may require CCTV systems. These systems will operate independently of the University owned CCTV system.
6. System storage will be off-site and furnished by the University.

Audio Visual Systems

STANDARDS AND COMPLIANCE

Audio Visual systems will comply with University of Illinois Facility Standards, as well as recognized industry design standards. The design will meet or exceed the following standards and procedures:

Systems will be designed to include all labor, equipment, supplies and materials for the complete installation of fully functional Audio/Visual systems. Design will include the following, as well as work not listed below but described elsewhere as it applies to all audio, video and control systems:

1. Raceway
2. Audio, video and control cabling
3. Equipment Racks and Cabinets
4. Source and head-end equipment
5. Field devices
6. Systems Testing
7. Documentation and submissions
8. Warranty and Service
9. All work shall conform to the National Electrical Code (NEC) and to applicable National Fire Protection Association (NFPA) codes.
10. All work shall conform to all Federal, State and local ordinances.
11. Where applicable, all fixtures, equipment and materials shall be as approved or listed by the following:
    - Factory Mutual Laboratories (FM).
    - Underwriters Laboratories, Inc. (UL).
    - National Electrical Manufacturers Association (NEMA).
12. References to the National Electrical Code and National Fire Protection Association (NFPA) are a minimum installation requirement standard. Design drawings and specification sections shall govern in those instances where requirements are greater than those specified in the NEC and NFPA.
13. All material and equipment shall be listed, labeled or certified by Underwriters' Laboratories, Inc. where such standards have been established. Equipment and material which are not covered by UL Standard will be accepted provided equipment and material are listed, labeled, certified or otherwise determined to meet safety requirements of a nationally recognized testing laboratory. Equipment of a class, which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe will be considered, if inspected or tested in accordance with national industrial standards such as NEMA, ICEA or ANSI. Evidence of compliance shall include certified test reports and definitive shop drawings.
14. All work shall meet or exceed the standards and procedures of the following:
    - National Fire Protection Association (NFPA): NFPA 70, NFPA 72, NFPA 90A
    - National Electrical Code (NEC)
    - American National Standards Institute (ANSI)
    - National Electrical Manufacturers Association (NEMA)
    - American Society of Testing Materials (ASTM)

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- Institute of Electronic & Electrical Engineers (IEEE
- Underwriters Laboratory (UL)
- Americans With Disabilities Act (ADA)

SYSTEM REQUIREMENTS SHALL INCLUDE THE FOLLOWING

New systems will accommodate video presentation and sound reinforcement. Systems will support conference, meeting, entertainment, and public gathering spaces. New Audio/visual systems will be considered for the following spaces-

1. Lower Level-
   - Fitness
   - Theater
   - Club
2. First Floor
   - Food Court
3. Second Floor
   - Conference and meeting spaces associated with the Administrative and Student Organization office suites.
   - Ballroom
   - Meeting Rooms
4. Third Floor
   - Illini Room
   - Illini Room Prefunction
   - Meeting Rooms
5. Fourth Floor
   - Limited Work

Each space requiring audio/visual technologies will be evaluated on a room by room basis with the operation and performance expectations determined by user needs and University standards. New systems will be permanent fixed systems designed with the end user in mind. Integrated control systems will be utilized to the fullest extent with the intent of simplifying system operation and in doing so, reduce the need for operating technicians.

Construction Cost Detail

Construction Cost

Additional Detail

The following is additional detail from the construction cost estimate. Refer to the cost estimate on page 79 for an overview of the construction costs and the overall project costs.

	COST SUMMARY-SOUTH BUILDING	133,630 GSF	$/SF	BUILDING TOTAL
01000	GENERAL REQUIREMENTS		$0.75	$100,000
02000	EXISTING CONDITIONS		$4.49	$600,000
03000	CONCRETE		$0.00	$0
04000	MASONRY		$1.68	$225,000
05000	METALS		$0.58	$78,000
06000	WOODS, PLASTICS & COMPOSITES		$0.21	$28,000
07000	THERMAL & MOISTURE PROTECTION SYSTEM		$5.37	$716,993
08000	OPENINGS		$7.64	$1,020,922
09000	FINISHES		$59.24	$7,916,839
10000	SPECIALTIES		$0.00	$0
11000	EQUIPMENT		$0.00	$0
12000	FURNISHINGS		$0.00	$0
13000	SPECIAL CONSTRUCTION		$0.00	$0
14000	CONVEYING EQUIPMENT		$4.29	$573,000
21000	FIRE SUPPRESSION		$5.28	$705,606
22000	PLUMBING		$1.90	$253,897
23000	HEATING, VENTILATING & AIR CONDITIONING		$52.83	$7,059,120
26000	ELECTRICAL		$3.81	$509,694
27000	COMMUNICATIONS & AV		$6.43	$858,750
28000	ELECTRONIC SAFETY AND SECURITY		$0.45	$60,000
31000	EARTHWORK		$0.00	$0
32000	EXTERIOR IMPROVEMENTS		$3.62	$483,366
33000	UTILITIES		$0.00	$0
	SUBTOTAL		**$158.57**	**$21,189,187**
	GENERAL CONDITIONS/BOND/INSURANCE	8.0%	$13.83	$1,847,697
	CONTRACTOR'S FEES	4.5%	$8.40	$1,122,476
	TOTAL - SOUTH BUILDING			$24,159,360

	COST SUMMARY-CENTER INFILL	131,000 GSF	$/SF	BUILDING TOTAL
01000	GENERAL REQUIREMENTS		$0.76	$100,000
02000	EXISTING CONDITIONS		$5.03	$659,128
03000	CONCRETE		$9.82	$1,286,464
04000	MASONRY		$3.70	$484,579
05000	METALS		$37.86	$4,960,205
06000	WOODS, PLASTICS & COMPOSITES		$1.14	$148,790
07000	THERMAL & MOISTURE PROTECTION SYSTEM		$7.68	$1,006,016
08000	OPENINGS		$6.59	$863,482
09000	FINISHES		$73.67	$9,650,167
10000	SPECIALTIES		$0.00	$0
11000	EQUIPMENT-KITCHEN		$31.60	$4,140,000
12000	FURNISHINGS		$0.00	$0
13000	SPECIAL CONSTRUCTION		$0.00	$0
14000	CONVEYING EQUIPMENT		$2.63	$345,067
21000	FIRE SUPPRESSION		$5.28	$691,719
22000	PLUMBING		$5.98	$783,380
23000	HEATING, VENTILATING & AIR CONDITIONING		$72.00	$9,432,000
26000	ELECTRICAL		$31.45	$4,119,575
27000	COMMUNICATIONS & AV		$9.71	$1,272,500
28000	ELECTRONIC SAFETY AND SECURITY		$4.34	$568,987
31000	EARTHWORK		$4.76	$623,636
32000	EXTERIOR IMPROVEMENTS		$3.47	$454,289
33000	UTILITIES		$2.96	$388,238
	SUBTOTAL		**$320.44**	**$41,978,222**
	GENERAL CONDITIONS/BOND/INSURANCE	8.0%	$27.94	$3,660,501
	CONTRACTOR'S FEES	4.5%	$16.98	$2,223,754
	TOTAL - CENTER INFILL			$47,862,477

	COST SUMMARY-NORTH BUILDING	149,100 GSF	$/SF	BUILDING TOTAL
01000	GENERAL REQUIREMENTS		$0.67	$100,000
02000	EXISTING CONDITIONS		$5.48	$817,174
03000	CONCRETE		$3.37	$502,200
04000	MASONRY		$2.01	$300,000
05000	METALS		$0.44	$65,000
06000	WOODS, PLASTICS & COMPOSITES		$0.20	$30,210
07000	THERMAL & MOISTURE PROTECTION SYSTEM		$5.55	$827,476
08000	OPENINGS		$8.05	$1,200,583
09000	FINISHES		$74.17	$11,059,245
10000	SPECIALTIES		$0.00	$0
11000	EQUIPMENT-KITCHEN		$11.80	$1,760,000
12000	FURNISHINGS		$0.00	$0
13000	SPECIAL CONSTRUCTION		$0.00	$0
14000	CONVEYING EQUIPMENT		$3.84	$573,000
21000	FIRE SUPPRESSION		$5.28	$786,765
22000	PLUMBING		$1.40	$208,600
23000	HEATING, VENTILATING & AIR CONDITIONING		$48.14	$7,178,178
26000	ELECTRICAL		$2.17	$323,815
27000	COMMUNICATIONS & AV		$5.17	$771,000
28000	ELECTRONIC SAFETY AND SECURITY		$0.32	$47,000
31000	EARTHWORK		$2.68	$400,000
32000	EXTERIOR IMPROVEMENTS		$0.38	$57,194
33000	UTILITIES		$3.35	$500,000
	SUBTOTAL		**$184.49**	**$27,507,440**
	PHASING COSTS	5.0%	$10.24	$1,526,663
	GENERAL CONDITIONS/BOND/INSURANCE	8.0%	$16.38	$2,442,661
	CONTRACTOR'S FEES	4.5%	$10.41	$1,552,616
	TOTAL - NORTH BUILDING			$33,029,380

	COST SUMMARY-PARKING RAMP OPTION	68,000 GSF	$/SF	BUILDING TOTAL
01000	GENERAL REQUIREMENTS		$0.00	$0
02000	EXISTING CONDITIONS		$0.00	$0
03000	CONCRETE		$30.71	$2,088,000
04000	MASONRY		$0.00	$0
05000	METALS		$0.00	$0
06000	WOODS, PLASTICS & COMPOSITES		$0.00	$0
07000	THERMAL & MOISTURE PROTECTION SYSTEM		$1.16	$79,174
08000	OPENINGS		$0.00	$0
09000	FINISHES		$0.00	$0
10000	SPECIALTIES		$0.19	$13,222
11000	EQUIPMENT-PARKING		$1.62	$110,000
12000	FURNISHINGS		$0.00	$0
13000	SPECIAL CONSTRUCTION		$0.00	$0
14000	CONVEYING EQUIPMENT		$2.03	$138,027
21000	FIRE SUPPRESSION		$4.19	$284,608
22000	PLUMBING		$3.14	$213,600
23000	HEATING, VENTILATING & AIR CONDITIONING		$8.47	$576,000
26000	ELECTRICAL		$8.00	$544,231
27000	COMMUNICATIONS & AV		$0.00	$0
28000	ELECTRONIC SAFETY AND SECURITY		$2.62	$178,368
31000	EARTHWORK		$51.19	$3,481,185
32000	EXTERIOR IMPROVEMENTS		$0.00	$0
33000	UTILITIES		$3.68	$250,000
	SUBTOTAL		**$117.01**	**$7,956,415**
	GENERAL CONDITIONS/BOND/INSURANCE	5.5%	$7.01	$476,987
	CONTRACTOR'S FEES	4.5%	$6.05	$411,727
	TOTAL - PARKING STRUCTURE			$8,845,129