



UNIVERSITY OF UTAH AMBULATORY ADMINISTRATIVE BUILDING FEASIBILITY STUDY

REVIEW SIGNATURES

We have reviewed the

University of Utah Ambulatory and Administrative Building Feasibility Study

and warrant that it adequately represents our request for a facility study to fulfill our mission and programming needs. All appropriate parties representing the University have reviewed the document for approval.

David Browdy	Chief Financial Officer, Office of Senior VP Health Sciences	Date
Andrew Burkhardt	Director, Facilities & Engineering, University Hospitals & Clinics	Date
Harry C. Corsi	Architectural Project Manager, Campus Planning	Date
William Holt	Project Manager, University of Utah Health Care	Date
Mark R. Liddle	Manager, Facilities & Engineering, University of Utah Health Care	Date
Dan K. Lundergan	Executive Director for Hospital Support Services & Specialty Clinics	Date
John C. McNary	Director, Campus Planning	Date
Michael G. Perez	Associate Vice President for Facilities Management, University of Utah	Date
Robert A. Simonton	Director of Capital Projects, Campus Planning	Date

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ACKNOWLEDGEMENTS

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INTRODUCTION

The Ambulatory and Administrative Building (AAB) is considered as one of the first enabling projects to allow the construction of the new Medical Education and Discovery building (MED) on the site of the existing University of Utah School of Medicine (Building 521). The AAB is to house departments and functions of the Health Science Campus. The building is to be sited to the west of the existing hospital building 525 and be constructed in coordination with the existing utility building on the site. The anticipated building program will include spaces for clinical care, general services, receiving, an outpatient operating suite, and ambulatory clinics.

STUDY PURPOSE

The purpose of this study is to assist the University to:

- Understand the interface between the existing hospital for Receiving, Laundry Services, Ambulatory Clinics and Operating Rooms.
- Understand the visual impact on the west-facing patient rooms of Building 525.
- Understand the impact on all utilities to serve the proposed building.
- Understanding of the requirements the new building will have on existing utilities and critical issues associated with the requirements.
- Understand the requirements that may occur on the Backup Boiler Plant and time line implications.
- Understand the soil conditions of the proposed site.
- Understand the interface of the new building with other adjacent structures (existing and proposed), the connection to the Medical Trax Station, and the impact on parking requirements.
- Understand the costs associated with construction of the following options:
 - o 3-story building (levels A, 1, 2) - general use Levels A and 2, clinical use Level 1.
 - o 4-story building (levels A, 1-3) - general use Levels A and 2, clinical use Level 1, outpatient surgery Level 3
 - o 7-story building (levels A, 1-6) - general use Levels A and 2, clinical use Levels 1, 4, 5, 6, outpatient surgery Level 3
 - o 7-story building (levels A, 1-6) - general use Levels A, 2, 4, 5, 6, clinical use Level 1, outpatient surgery Level 3
 - o 7-story building (levels A, 1-6) - general use Levels A and 2, clinical use Level 1, outpatient surgery Level 3, shell space Levels 4, 5, 6.
 - o Identify the outpatient surgery level cost separately
 - o Identify cost of full versus partial basement level

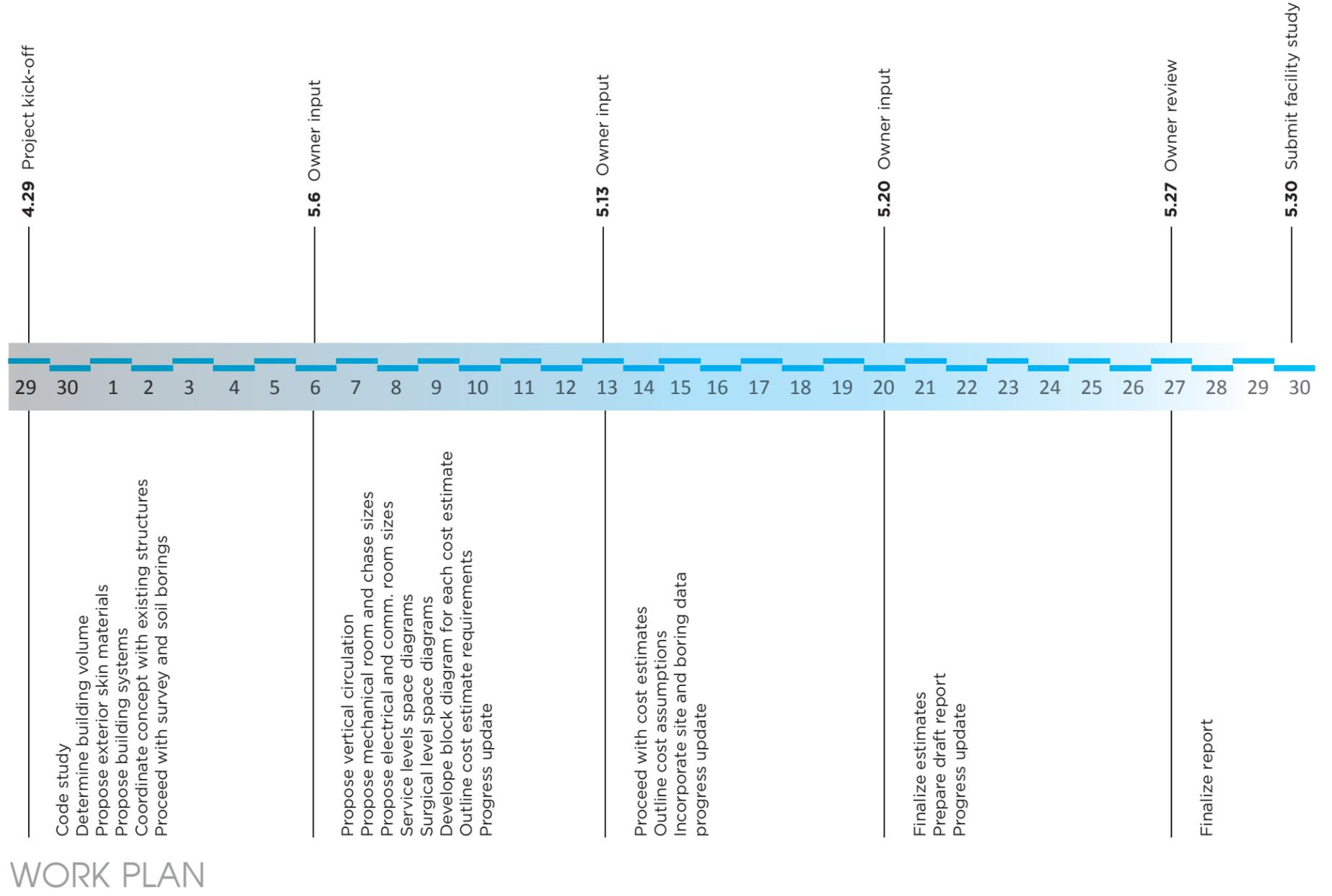
The scope of work also included:

Incorporating space requirements for general services and receiving functions. Demonstrating the outpatient surgery level has the ability to provide operating rooms and code required support functions within a single floor plate.

Two soil borings. One boring was taken between the boiler building and the hospital to a depth equal to the toe of the West slope. One boring was taken between the boiler building and the west slope to a depth 20' below the toe of the West slope. A soils analysis was prepared based on the boring results.

A topographic survey that provides existing contours at one-foot intervals, spot elevations of critical points, and defines tie-in data for existing roadways and concrete features. Utility information, such as surface elevations, invert elevations for gravity lines, transformers, power lines, and other visible appurtenances sufficient for design are provided. The existing utility map was referenced to best define field locations where visible. Building and structure exterior faces are included along with elevations of the hospital ground floor, the connector structure, and the top level of the parking ramp.

SCHEDULE



The following diagrams illustrate the placement of expected and placeholder programs to be decanted into the AAB from Building 521. Each configuration assumes the maximum footprint available on the selected site.

Expected demand is the area of the programs that have been identified to be incorporated into the AAB.

Placeholder demand is the area of programs that do not currently have a designated home.

UU Relocated Stores is an assumed area to allow a service connection on Level A from the AAB to Building 525. This area is being accounted for in the AAB.

The building is being planned to have a physical connection to Building 525 at each level. Circulation between buildings at each level must be evaluated for appropriateness.

The Outpatient Surgery Level 3 accommodates up to 6 operating rooms and necessary support functions given the assumed floor plate of approximately 28,900 s.f.

The Clinical Level 1 accommodates approximately 14 procedure rooms and 50 exam rooms given the assumed floor plate of 28,705 s.f.

The cost models for each configuration are in present day dollars and do not reflect escalation factors. Construction inflation is estimated at 5% per year in the Salt Lake City area. The costs were developed based on the information gathered in the exploration of the site included in Section 6 of this report.

The cost models assume that no in-patients will enter this building.

The cost to revise from a B occupancy to an I2 occupancy structural system is estimated to be \$10/BGSF or approximately \$2.6M for the seven story structure. This allows for the potential of conversion of the facility to an I-2 (hospital) occupancy.

The cost to convert an office floor to a clinical floor is estimated to be \$47.42/SF or approximately \$1.5M per level in present day dollars.

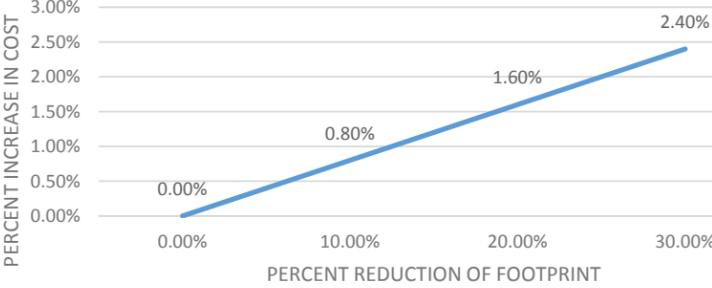
The construction cost of converting a clinical occupancy to a hospital occupancy is estimated to be \$65/SF.

The mechanical system for the AAB assumes connecting to the HSC central plant for high temperature hot water (HTHW) and chilled water (CW). A connection fee of \$500,000 has been added to the construction estimate for the building. It has been determined that the central plant has capacity for the AAB taking into consideration the planned construction of Huntsman Phase IV. During construction of the AAB and until Building 521 is decommissioned, the central plant will not have redundant capacity for either HTHW or CW. A cost of \$100,000 has been added to the construction budget to connect to the bulk oxygen supply.

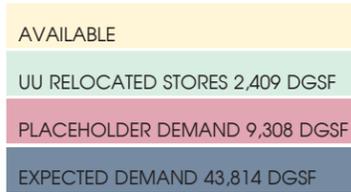
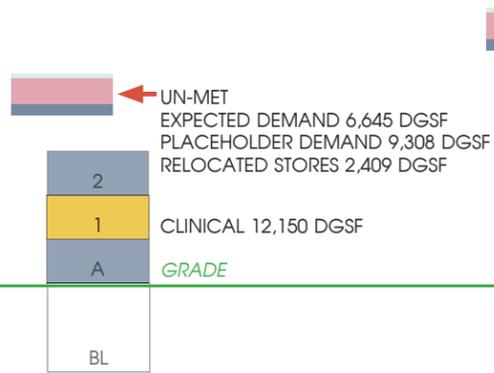
Health Science Campus electrical upgrades have not been factored into the cost of the AAB.

Based on the 2014 BOMA Experience Exchange Report, the total operating expenses for the building will range from \$7.20 to \$8.45 per square foot based on office use.

Should the footprint of the building decrease, the following chart illustrates the potential increase in cost.

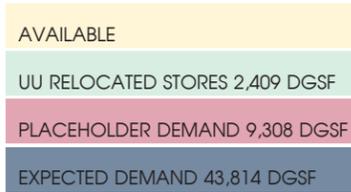
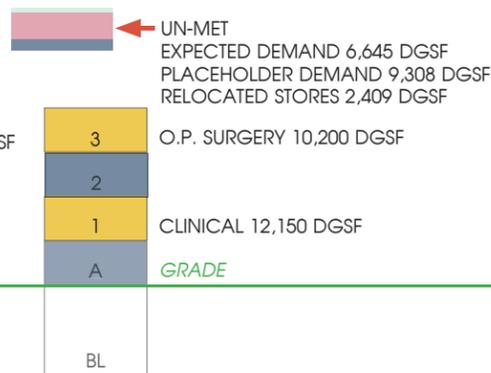


3 LEVELS ABOVE GRADE



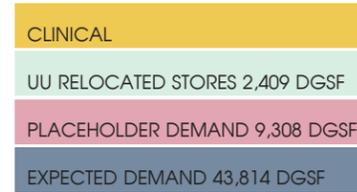
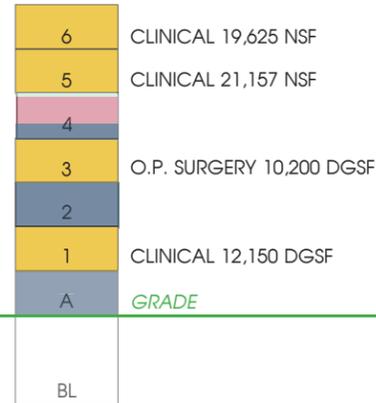
1 PARTIAL LOWER LEVEL
108,229 BGSF
\$55,388,451 TOTAL PROJ. COST
\$512/BGSF

4 LEVELS ABOVE GRADE

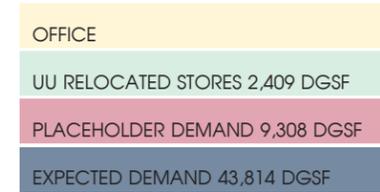
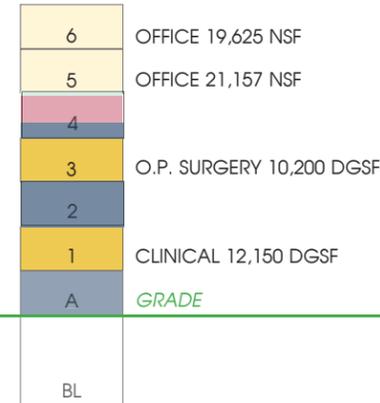


2 PARTIAL LOWER LEVEL
137,353 BGSF
\$69,563,170 TOTAL PROJ. COST
\$507/BGSF

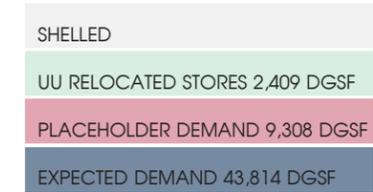
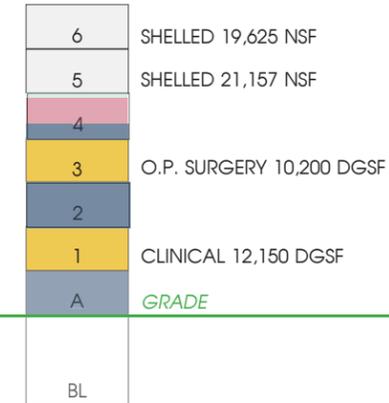
7 LEVELS ABOVE GRADE



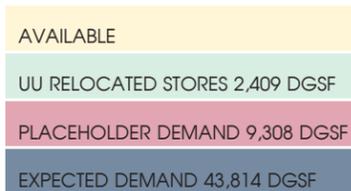
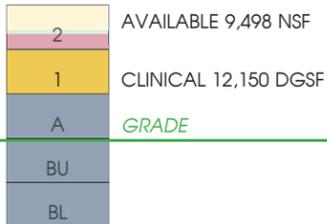
3 PARTIAL LOWER LEVEL
229,377 BGSF
\$113,840,506 TOTAL PROJ. COST
\$496/BGSF



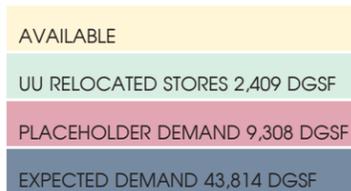
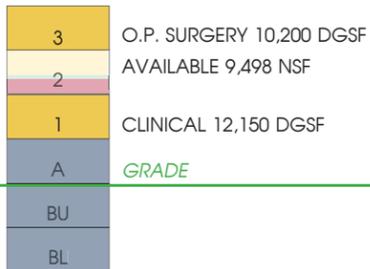
4 PARTIAL LOWER LEVEL
229,377 BGSF
\$108,364,823 TOTAL PROJ. COST
\$472/BGSF



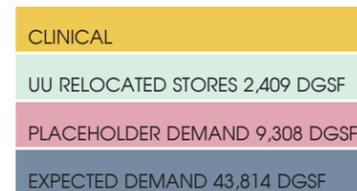
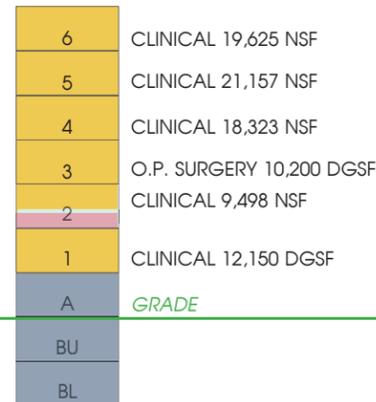
5 PARTIAL LOWER LEVEL
229,377 BGSF
\$89,782,307 TOTAL PROJ. COST
\$391/BGSF



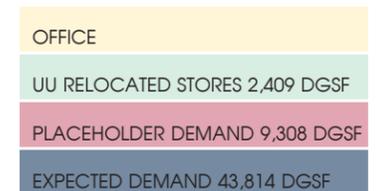
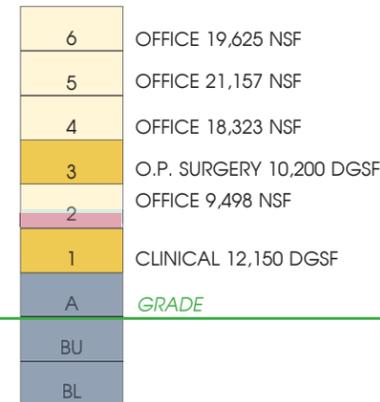
1A TWO LOWER LEVELS
137,147 BGSF
\$65,946,786 TOTAL PROJ. COST
\$481/BGSF



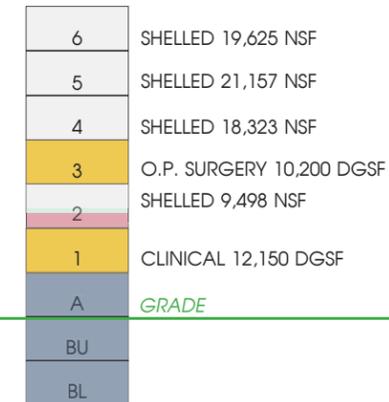
2A TWO LOWER LEVELS
166,271 BGSF
\$80,121,505 TOTAL PROJ. COST
\$482/BGSF



3A TWO LOWER LEVELS
258,295 BGSF
\$124,398,841 TOTAL PROJ. COST
\$482/BGSF

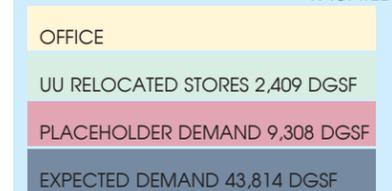
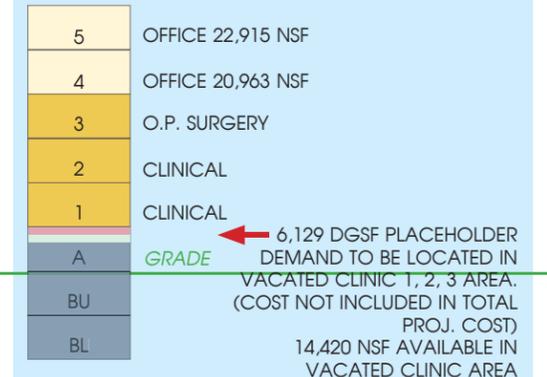


4A TWO LOWER LEVELS
258,295 BGSF
\$113,523,158 TOTAL PROJ. COST
\$439/BGSF



5A TWO LOWER LEVELS
258,295 BGSF
\$100,340,642 TOTAL PROJ. COST
\$389/BGSF

6 LEVELS ABOVE GRADE CASE STUDY



CS TWO LOWER LEVELS
227,801 BGSF
\$107,498,848 TOTAL PROJ. COST
\$472/BGSF

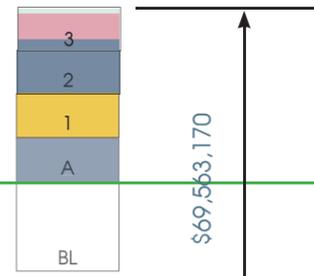
3 LEVELS ABOVE GRADE

4 LEVELS ABOVE GRADE

7 LEVELS ABOVE GRADE

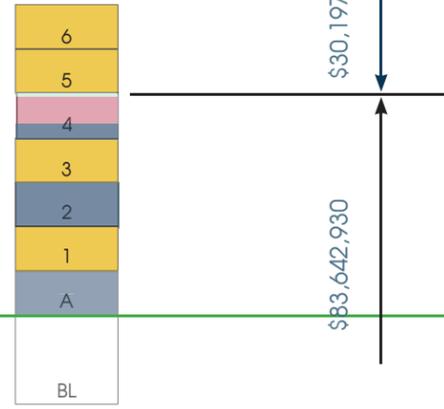
6 LEVELS ABOVE GRADE CASE STUDY

GRADE



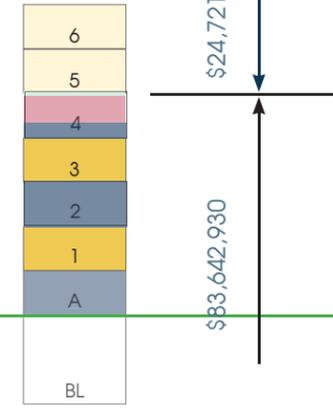
AVAILABLE
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

2 PARTIAL LOWER LEVEL
137,353 BGSF
\$69,563,170 TOTAL PROJ. COST
\$507/BGSF



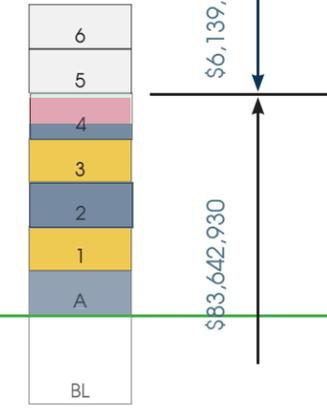
CLINICAL
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

3 PARTIAL LOWER LEVEL
229,377 BGSF
\$113,840,506 TOTAL PROJ. COST
\$496/BGSF



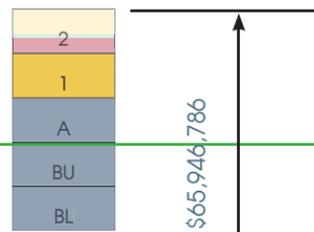
OFFICE
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

4 PARTIAL LOWER LEVEL
229,377 BGSF
\$108,364,823 TOTAL PROJ. COST
\$472/BGSF



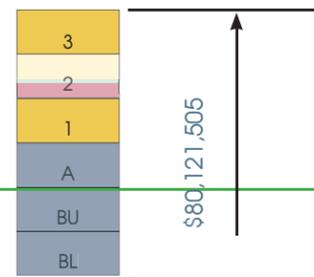
SHELLED
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

5 PARTIAL LOWER LEVEL
229,377 BGSF
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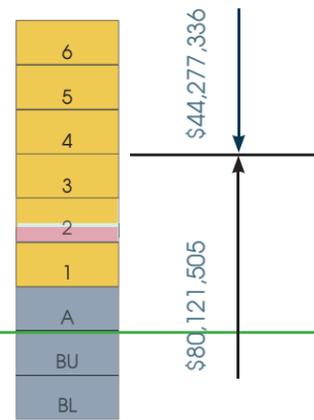
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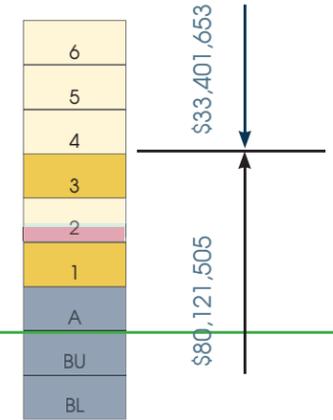
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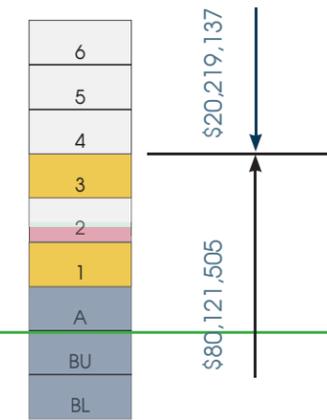
CLINICAL
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
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3A TWO LOWER LEVELS
258,295 BGSF
\$124,398,841 TOTAL PROJ. COST
\$482/BGSF



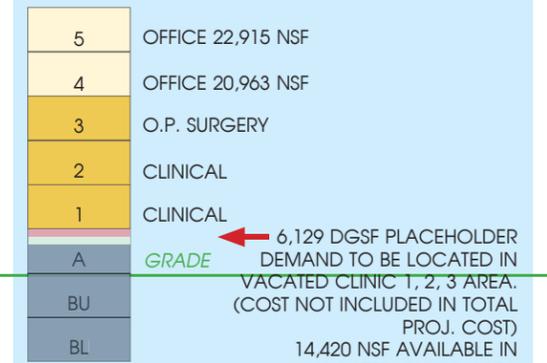
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PLACEHOLDER DEMAND 9,308 DGSF
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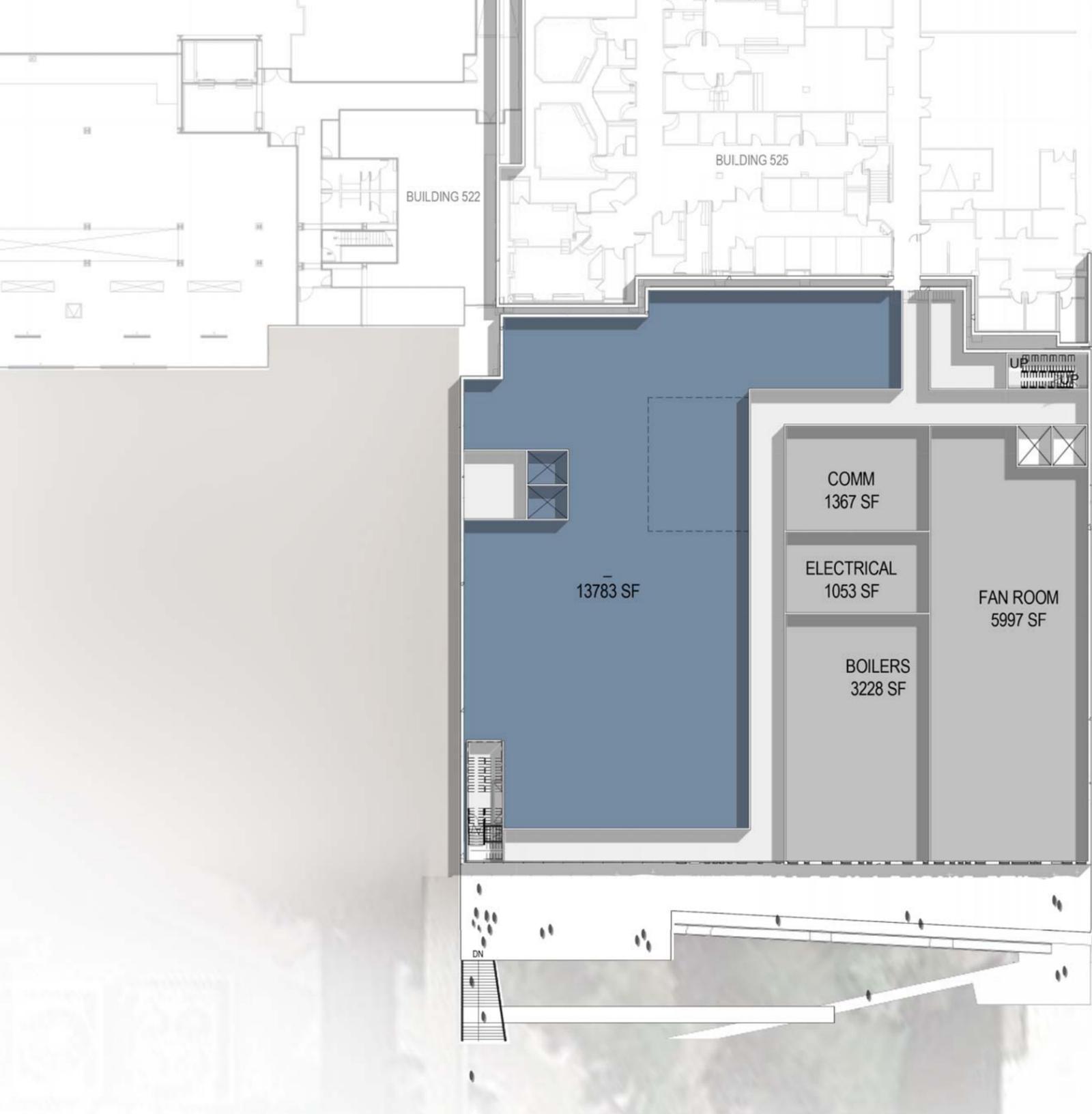
OFFICE
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PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

CS TWO LOWER LEVELS
227,801 BGSF
\$107,498,848 TOTAL PROJ. COST
\$472/BGSF

SCHEME CS

Future phases of the AAB Project are being based on Scheme CS. The budget for Scheme CS has been updated as of December 8, 2014.

Construct the AAB with a two level basement. Provide natural light to available basement spaces. Relocate all clinics from Building 521 and Building 525 Clinics 1, 2, and 3 into levels 1 and 2 of the AAB. Target 110 total exam rooms and 14 procedure rooms for the Clinical Demand. Use the space made available in Clinics 1, 2, and 3 as available demand space. Place Outpatient Surgery on Level 3. Relocate vertical circulation elements to respond to program changes. Provide two levels of office space.



6 STORY BUILDING

Level	Building Gross SF	Net SF
Level BL	31,670	13,783
Level BU	14,459	13,783
Level A	33,189	21,836
Level 1	28,705	Clinical
Level 2	29,124	Clinical
Level 3	29,124	O.P. Surgery
Level 4	29,830	20,963
Level 5	31,700	22,915
Total	227,801	

OFFICE 22,915 NSF	5
OFFICE 20,963 NSF	4
O.P. SURGERY: 6 OPERATING ROOMS, 24 PREP/RECOVERY STATIONS, STERILE SUPPLY	3
CLINICAL: 57 EXAM ROOMS, 8 CONSULT ROOMS, 9 PROCEDURE ROOMS.	2
CLINICAL: 57 EXAM ROOMS, 10 CONSULT ROOMS, 9 PROCEDURE ROOMS.	1
PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A
	BU
	BL

TOTAL PROJECT COST
\$107,498,848

6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
14,420 NSF AVAILABLE IN VACATED CLINIC AREA

- OFFICE
- CLINICAL/O.P. SURGERY
- UU RELOCATED STORES 2,409 DGSF
- PLACEHOLDER DEMAND 9,308 DGSF
- EXPECTED DEMAND 43,814 DGSF

LEVEL BL

EXECUTIVE SUMMARY - CASE STUDY

6 STORY BUILDING



Level	Building Gross SF	Net SF
Level BL	31,670	13,783
Level BU	14,459	13,783
Level A	33,189	21,836
Level 1	28,705	Clinical
Level 2	29,124	Clinical
Level 3	29,124	O.P. Surgery
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Level 5	31,700	22,915
Total	227,801	

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OFFICE 20,963 NSF	4
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CLINICAL: 57 EXAM ROOMS, 8 CONSULT ROOMS, 9 PROCEDURE ROOMS.	2
CLINICAL: 57 EXAM ROOMS, 10 CONSULT ROOMS, 9 PROCEDURE ROOMS.	1
PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A
	BU
	BL

TOTAL PROJECT COST
\$107,498,848

6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
14,420 NSF AVAILABLE IN VACATED CLINIC AREA

OFFICE	
CLINICAL/O.P. SURGERY	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL BU

EXECUTIVE SUMMARY - CASE STUDY

6 STORY BUILDING



Level	Building Gross SF	Net SF
Level BL	31,670	13,783
Level BU	14,459	13,783
Level A	33,189	21,836
Level 1	28,705	Clinical
Level 2	29,124	Clinical
Level 3	29,124	O.P. Surgery
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Total	227,801	

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OFFICE 20,963 NSF	4
O.P. SURGERY: 6 OPERATING ROOMS, 24 PREP/RECOVERY STATIONS, STERILE SUPPLY	3
CLINICAL: 57 EXAM ROOMS, 8 CONSULT ROOMS, 9 PROCEDURE ROOMS.	2
CLINICAL: 57 EXAM ROOMS, 10 CONSULT ROOMS, 9 PROCEDURE ROOMS.	1
PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A
	BU
	BL

TOTAL PROJECT COST
\$107,498,848

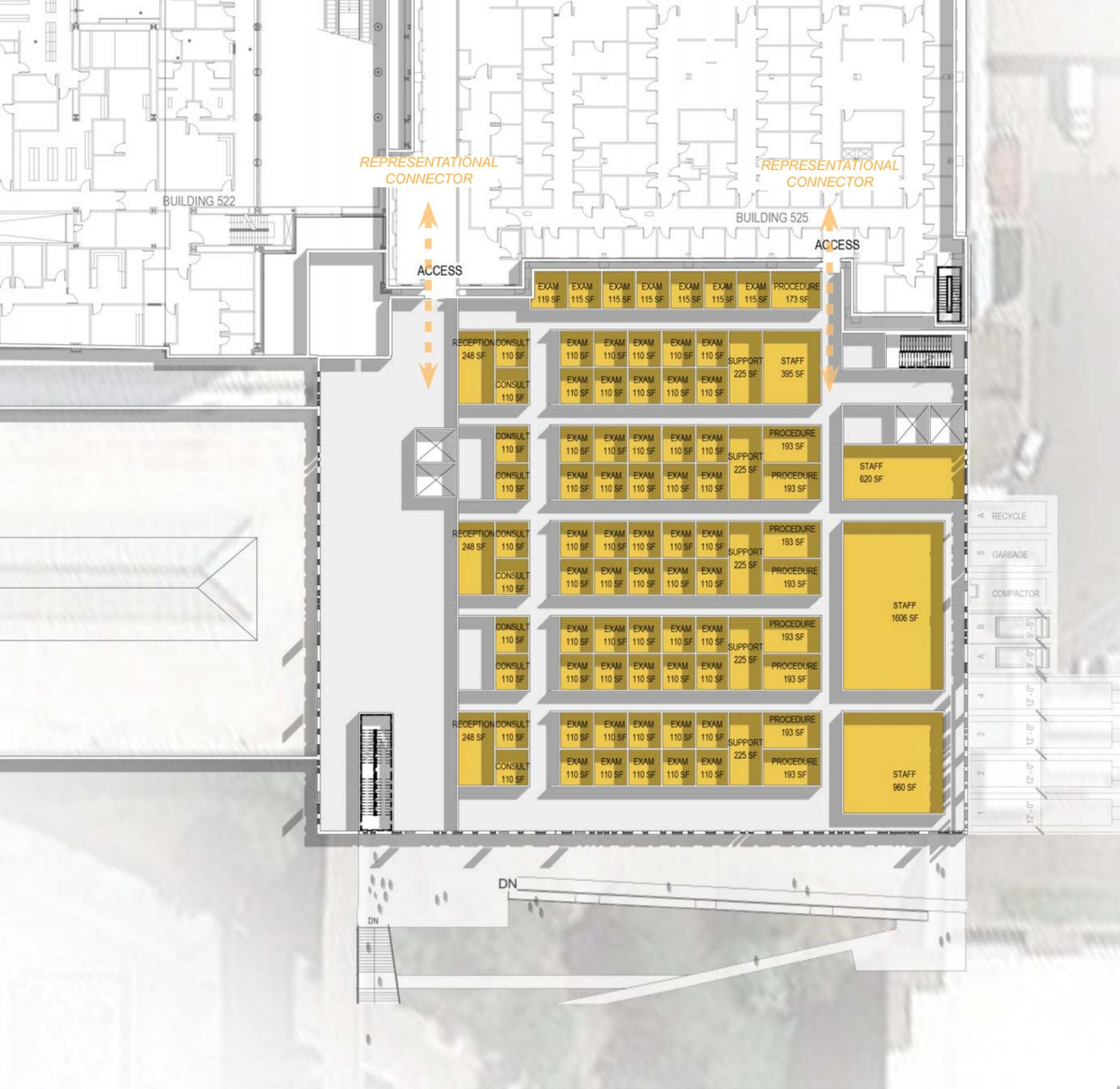
6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
14,420 NSF AVAILABLE IN VACATED CLINIC AREA

OFFICE	
CLINICAL/O.P. SURGERY	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL A

EXECUTIVE SUMMARY - CASE STUDY

6 STORY BUILDING



Level	Building Gross SF	Net SF
Level BL	31,670	13,783
Level BU	14,459	13,783
Level A	33,189	21,836
Level 1	28,705	Clinical
Level 2	29,124	Clinical
Level 3	29,124	O.P. Surgery
Level 4	29,830	20,963
Level 5	31,700	22,915
Total	227,801	

OFFICE 22,915 NSF	5
OFFICE 20,963 NSF	4
O.P. SURGERY: 6 OPERATING ROOMS, 24 PREP/RECOVERY STATIONS, STERILE SUPPLY	3
CLINICAL: 57 EXAM ROOMS, 8 CONSULT ROOMS, 9 PROCEDURE ROOMS.	2
CLINICAL: 57 EXAM ROOMS, 10 CONSULT ROOMS, 9 PROCEDURE ROOMS.	1
PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A
	BU
	BL

TOTAL PROJECT COST
\$107,498,848

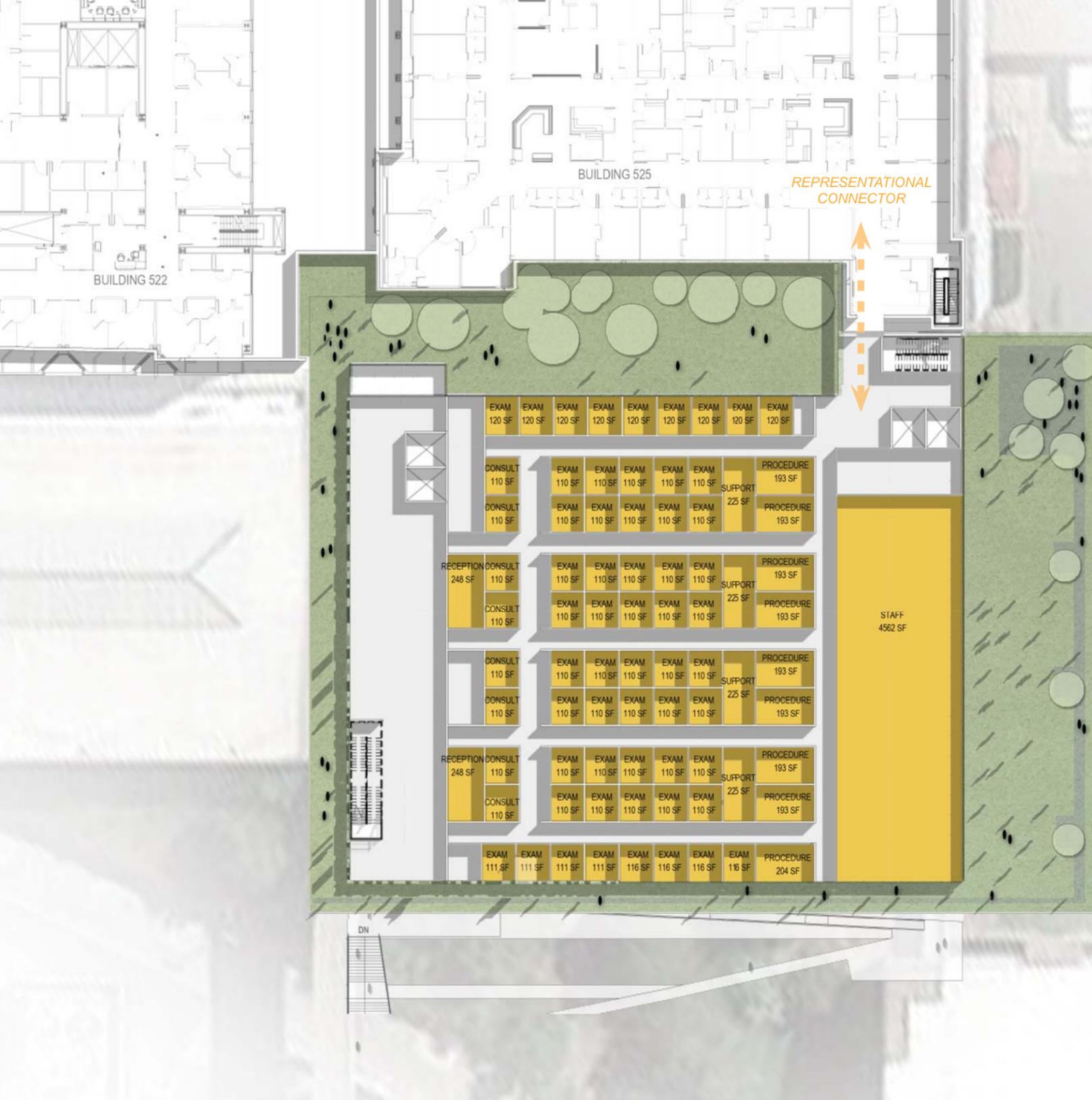
← 6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
14,420 NSF AVAILABLE IN VACATED CLINIC AREA

- OFFICE
- CLINICAL/O.P. SURGERY
- UU RELOCATED STORES 2,409 DGSF
- PLACEHOLDER DEMAND 9,308 DGSF
- EXPECTED DEMAND 43,814 DGSF

LEVEL 1

EXECUTIVE SUMMARY - CASE STUDY

6 STORY BUILDING



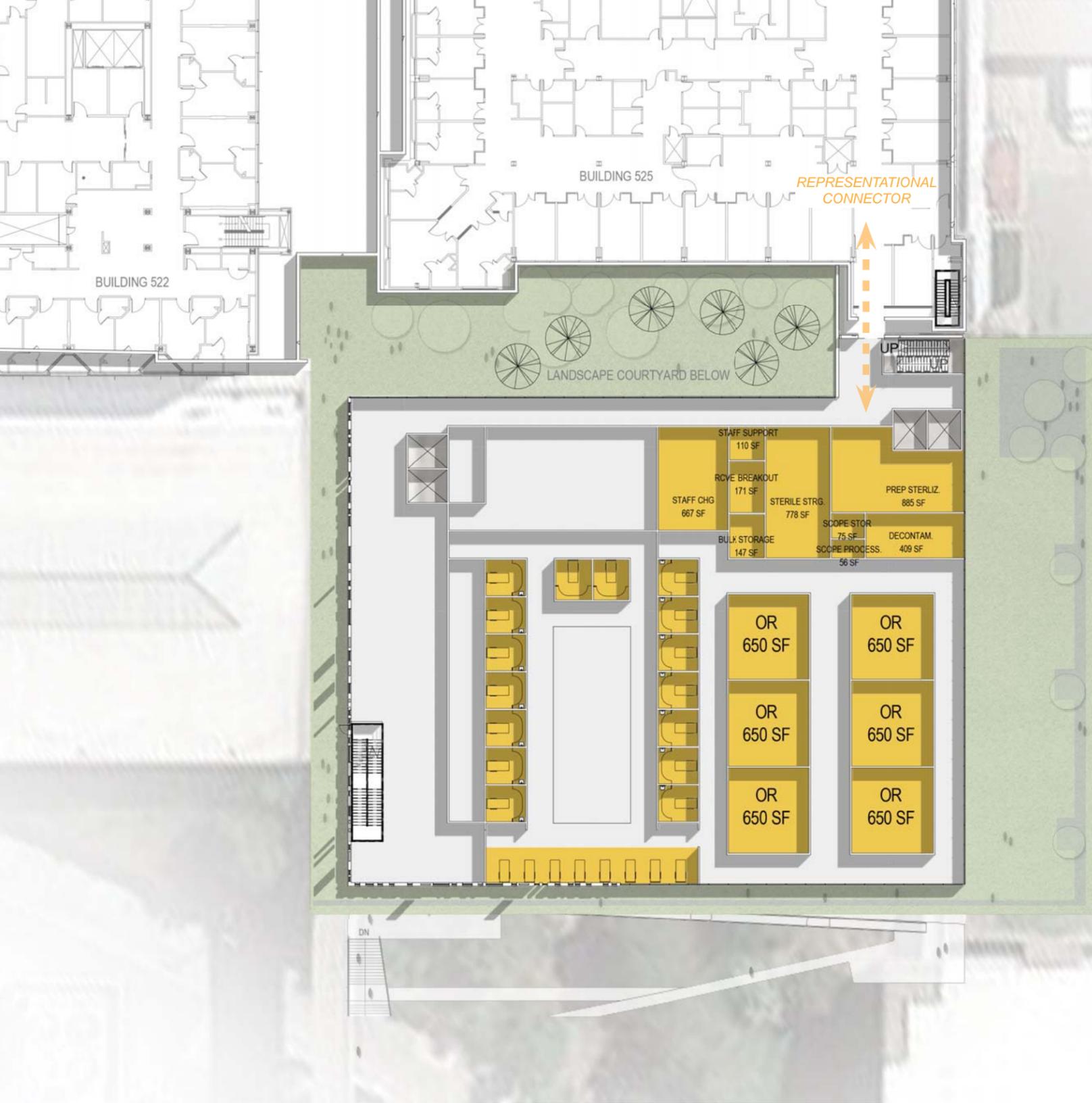
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CLINICAL: 57 EXAM ROOMS, 10 CONSULT ROOMS, 9 PROCEDURE ROOMS.	1
PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A
	BU
	BL

TOTAL PROJECT COST
\$107,498,848

← 6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
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- OFFICE
- CLINICAL/O.P. SURGERY
- UU RELOCATED STORES 2,409 DGSF
- PLACEHOLDER DEMAND 9,308 DGSF
- EXPECTED DEMAND 43,814 DGSF



6 STORY BUILDING

Level	Building Gross SF	Net SF
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Total	227,801	

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PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A
	BU
	BL

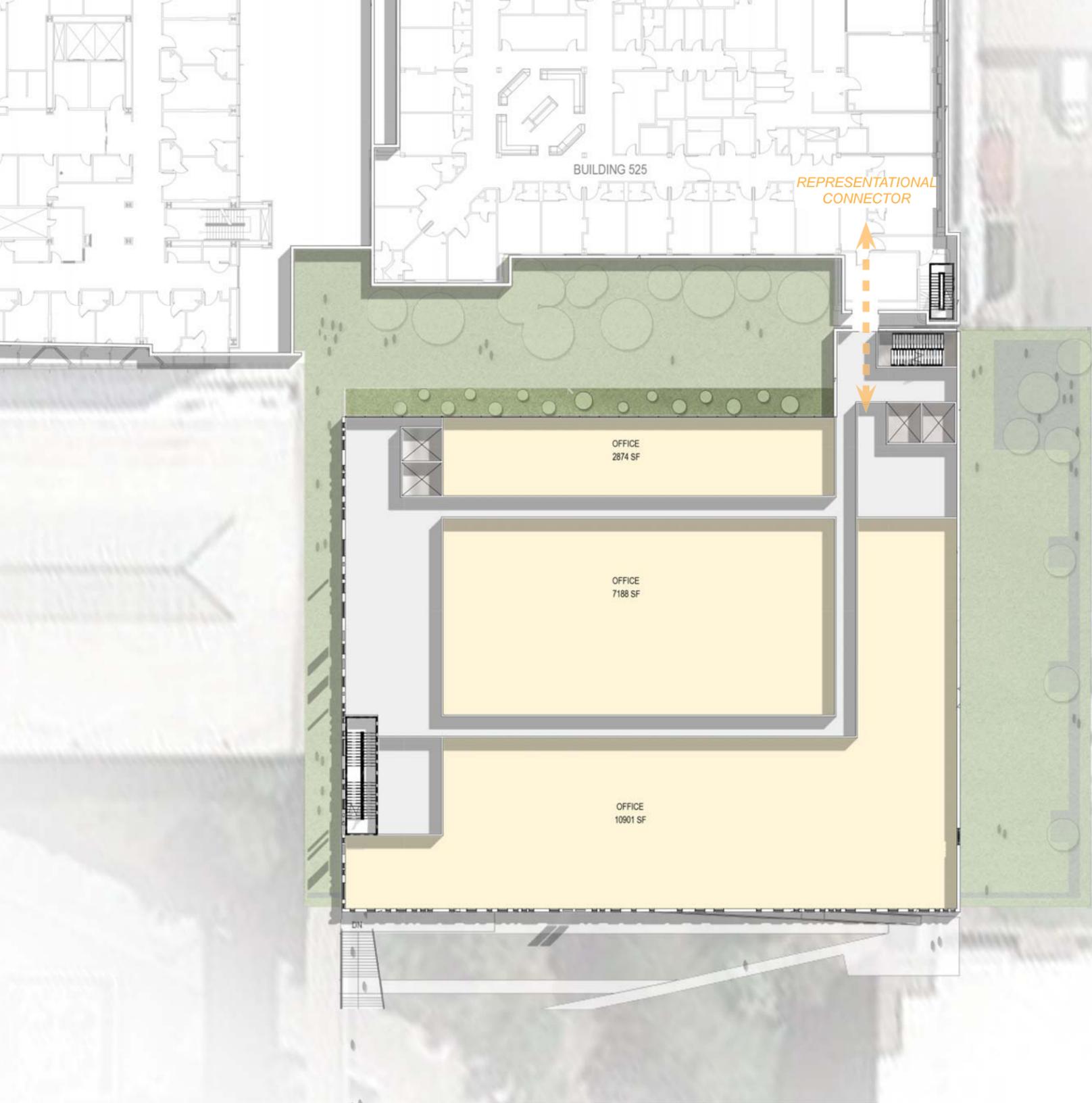
TOTAL PROJECT COST
\$107,498,848

← 6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
14,420 NSF AVAILABLE IN VACATED CLINIC AREA

OFFICE	
CLINICAL/O.P. SURGERY	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL 3

EXECUTIVE SUMMARY - CASE STUDY



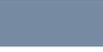
6 STORY BUILDING

Level	Building Gross SF	Net SF
Level BL	31,670	13,783
Level BU	14,459	13,783
Level A	33,189	21,836
Level 1	28,705	Clinical
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Level 5	31,700	22,915
Total	227,801	

OFFICE 22,915 NSF	5
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O.P. SURGERY: 6 OPERATING ROOMS, 24 PREP/RECOVERY STATIONS, STERILE SUPPLY	3
CLINICAL: 57 EXAM ROOMS, 8 CONSULT ROOMS, 9 PROCEDURE ROOMS.	2
CLINICAL: 57 EXAM ROOMS, 10 CONSULT ROOMS, 9 PROCEDURE ROOMS.	1
PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A BU BL

TOTAL PROJECT COST
\$107,498,848

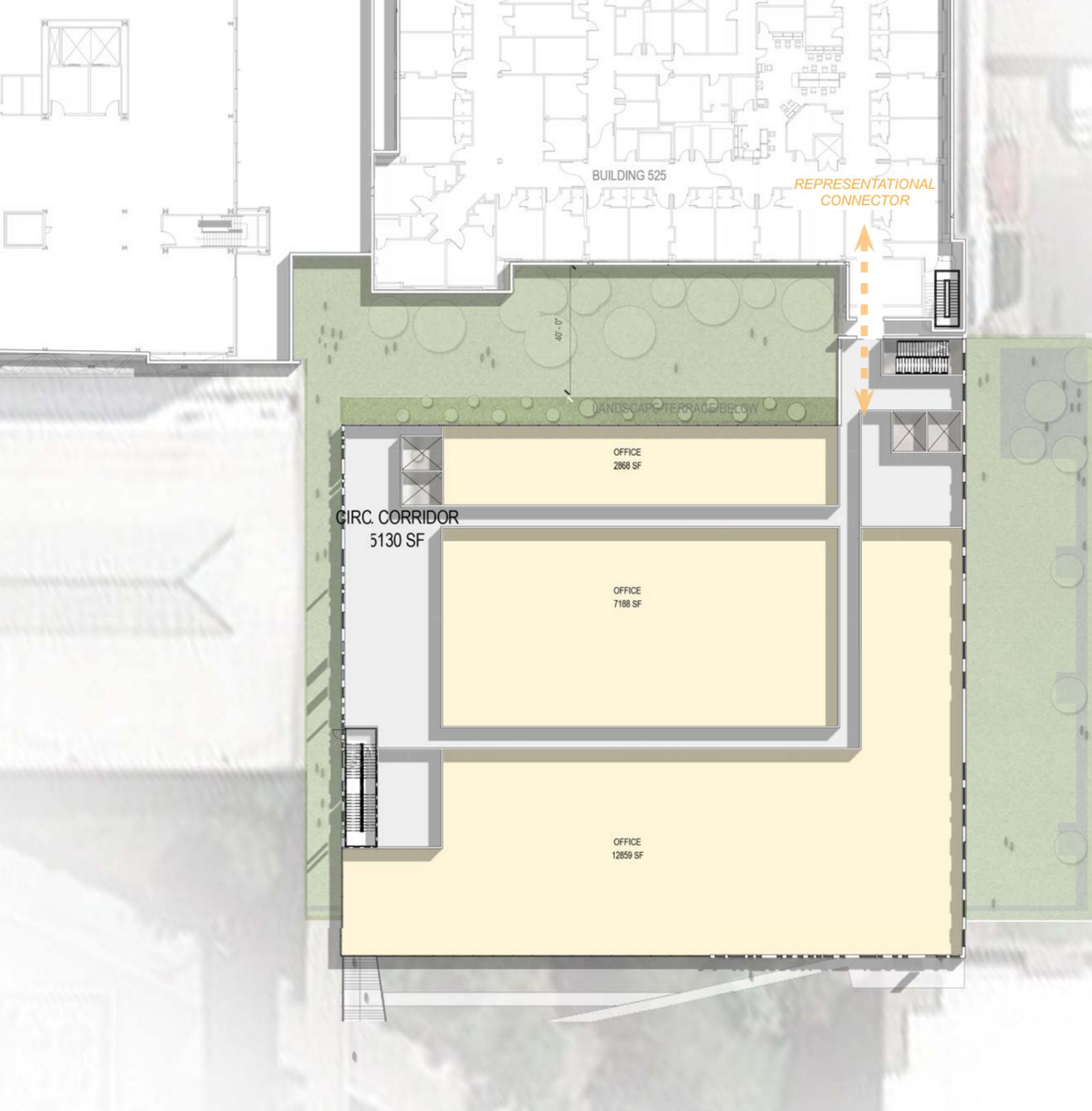
← 6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
14,420 NSF AVAILABLE IN VACATED CLINIC AREA

OFFICE	
CLINICAL/O.P. SURGERY	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL 4

EXECUTIVE SUMMARY - CASE STUDY

6 STORY BUILDING



Level	Building Gross SF	Net SF
Level BL	31,670	13,783
Level BU	14,459	13,783
Level A	33,189	21,836
Level 1	28,705	Clinical
Level 2	29,124	Clinical
Level 3	29,124	O.P. Surgery
Level 4	29,830	20,963
Level 5	31,700	22,915
Total	227,801	

OFFICE 22,915 NSF	5
OFFICE 20,963 NSF	4
O.P. SURGERY: 6 OPERATING ROOMS, 24 PREP/RECOVERY STATIONS, STERILE SUPPLY	3
CLINICAL: 57 EXAM ROOMS, 8 CONSULT ROOMS, 9 PROCEDURE ROOMS.	2
CLINICAL: 57 EXAM ROOMS, 10 CONSULT ROOMS, 9 PROCEDURE ROOMS.	1
PLACEHOLDER DEMAND 3,179 DGSF UU RELOCATED STORES 2,409 DGSF EXPECTED DEMAND 43,814 DGSF	A BU BL

TOTAL PROJECT COST
\$107,498,848

6,129 DGSF PLACEHOLDER DEMAND TO BE LOCATED IN VACATED CLINIC 1, 2, 3 AREA. (COST NOT INCLUDED IN TOTAL PROJ. COST)
14,420 NSF AVAILABLE IN VACATED CLINIC AREA

- OFFICE
- CLINICAL/O.P. SURGERY
- UU RELOCATED STORES 2,409 DGSF
- PLACEHOLDER DEMAND 9,308 DGSF
- EXPECTED DEMAND 43,814 DGSF



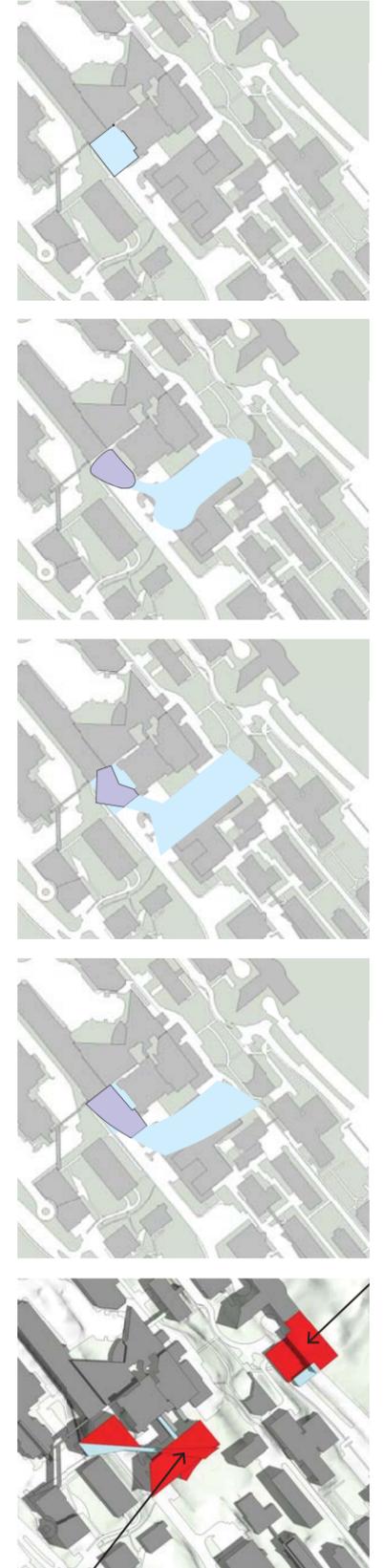
This study has filled the available site to maximize the footprint of the building. The final shape and footprint of the AAB will influence the lay out of the programmed spaces. This will be most evident in the configuration of the clinics and the outpatient surgery space. Clinical and surgical spaces are typically more efficient in rectangular shapes.

The outpatient surgery level is programmed for 6 operating rooms with a sterile core, 24 prep/recovery stations and sterile processing. Should the footprint reduce, or the configuration of the building reduce space efficiency, options for this program may include omitting the sterile core and/or omitting sterile processing from this level.

Each clinic level is programmed for 57 exam rooms, 10 consult rooms, and 9 procedure rooms. A reduction in the floor plate will result in a reduction in available rooms. As a general concept, a 15% reduction in the floor plate will result in a 15% reduction in each room type.

It is possible to increase the floor plate of the AAB by extending outside of the assumed site in the direction of the new MED. Factors to consider include use of existing loading docks during construction, further disruption of underground utilities, constructing around the existing School of Medicine, and the future connection to the MED.

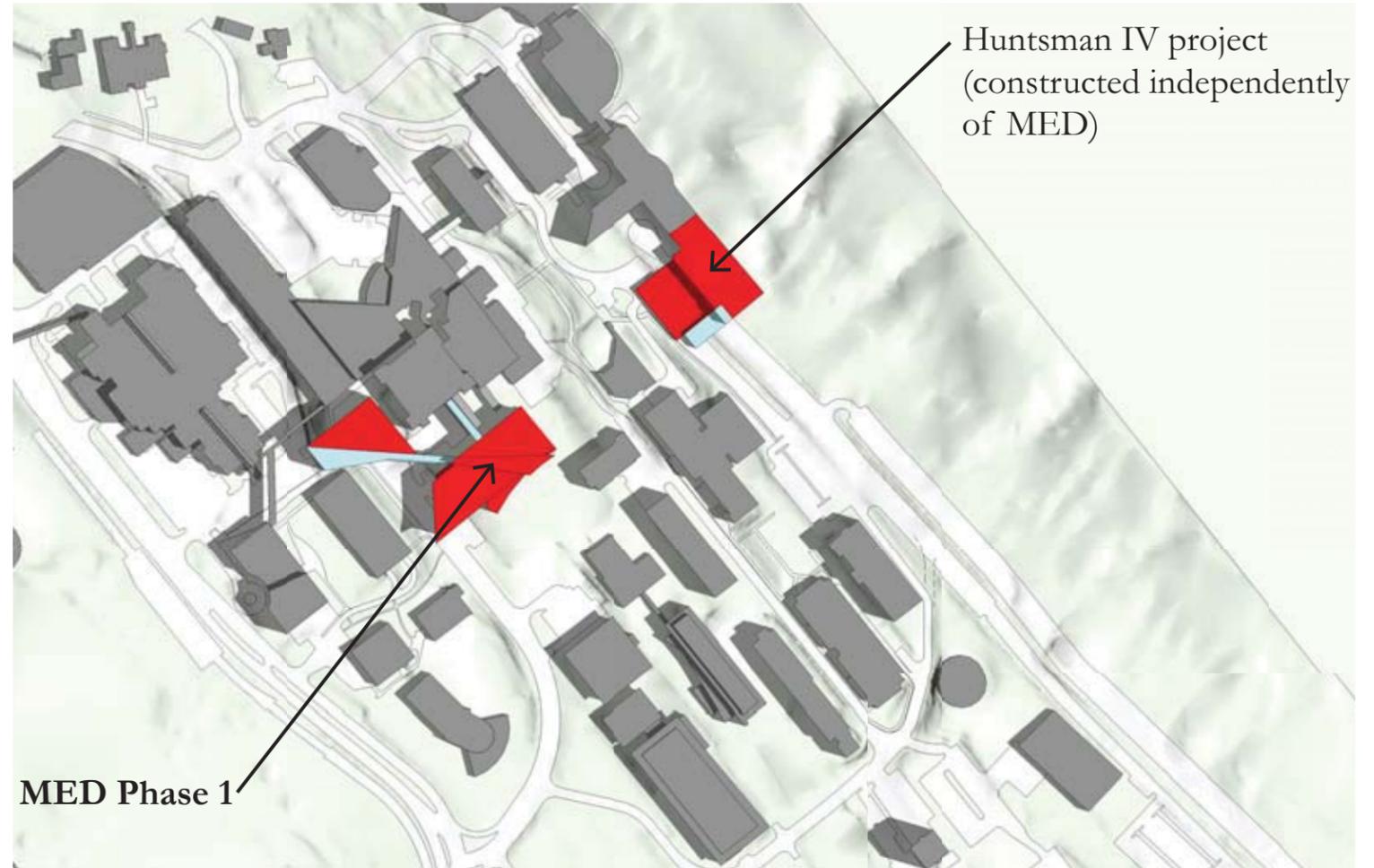
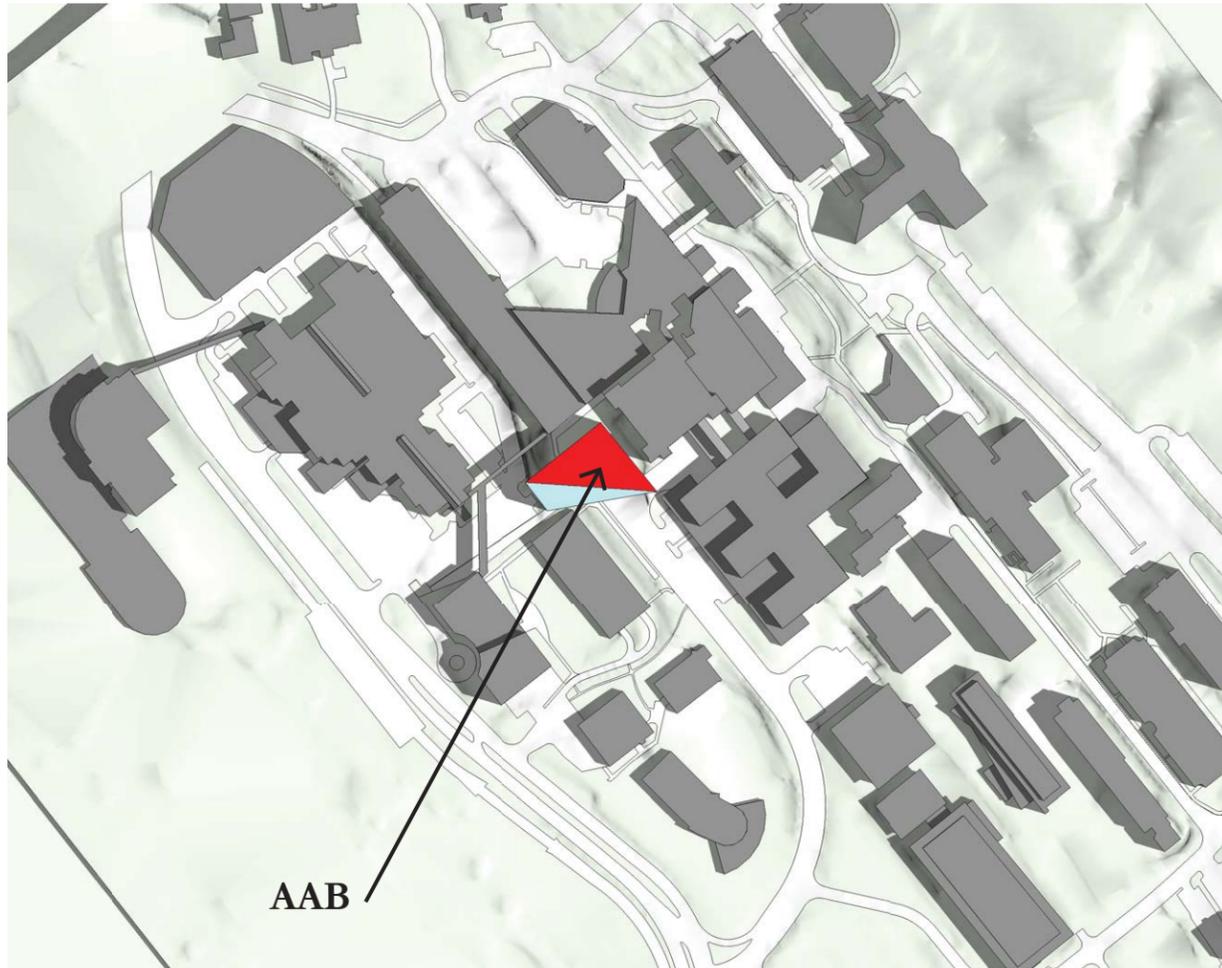
A square building is the optimal shape for cost as this gives the least amount of exterior wall surface as possible. As exterior wall configurations change and the wall surface increases, the cost of the building will increase. The increase can be estimated as: a 10% increase in exterior wall surface equals a 1% increase in building cost.



The location of the AAB was initially selected in the HSC Master Plan Study. Utility, grading and soil conditions were analyzed as part of this study to provide accuracy to design and cost assumptions.

The AAB Space Planning summary was developed through internal department interviews and surveys. The expected demand includes a staff touchdown space of 9,000 square feet. The areas reflect a full decant of Building 521 of University Hospital functions.

BACKGROUND INFORMATION



HEALTH SCIENCE CAMPUS MASTER PLAN ENABLING PROJECT

HEALTH SCIENCE CAMPUS MASTER PLAN PHASE I CONSTRUCTION



SITE SURVEY



AERIAL PHOTO



SITE SURVEY - PROJECTED BUILDING AREA



AERIAL PHOTO - PROJECTED BUILDING AREA

University Hospital Functions in Building 521	Building 521 Current department sqft (gross)	AAB Expected Demand department sqft (gross)	AAB Placeholder Demand department sqft (gross)	AAB Clinical Demand department sqft (gross)	Other Locations department sqft (gross)
Admin & Support Services	81,850	43,814	5,676		35,690
Diagnostic & Patient Care Services	4,415	-	3,632		783
Clinics & Procedure Rooms - 521	42,227	-		28,700	13,527
Total department sqft (gross)	128,492	43,814	9,308	28,700	50,000

Refer to the Executive Summary and Tabs 1a, 4 and 5 for placement of department sqft (gross) within the proposed building.

Expected demand includes 9,000 s.f. designated as a staff touchdown area. The expected demand reflects adjustments made to current space requirements as determined by department managers.

The areas do not include the Rehab Unit and 5 West. These functions are to be located in other facilities.

Other locations for clinics include Madsen, Building 525, and Community Clinics. Clinics are in as placeholders as they have not been confirmed as to their final destination. The Clinical Demand Total assumes clinical use of the existing Clinics 1, 2, and 3 in Building 525.

Refer to Ambulatory and Administration Building Space Planning spreadsheet in Tab 6 for individual department statistics.

PARKING

957 total estimated employees in Building 521

143 estimated support services employees relocated off the Health Science Campus

15% estimated reduction in employee required parking

30,000 to 50,000 estimated patient visits per year relocated off the Health Science Campus

Assuming weekday only visits (260 days) and a 2 hour visit duration over a 7 hour duration (3.5 parking space turnovers) yields an estimated reduction of 33 - 55 spaces.

$30,000/260/(7/2) = 33$ Spaces

$50,000/260/(7/2) = 55$ Spaces

The floor plan studies of Sections 3 and 4 evaluate two options:

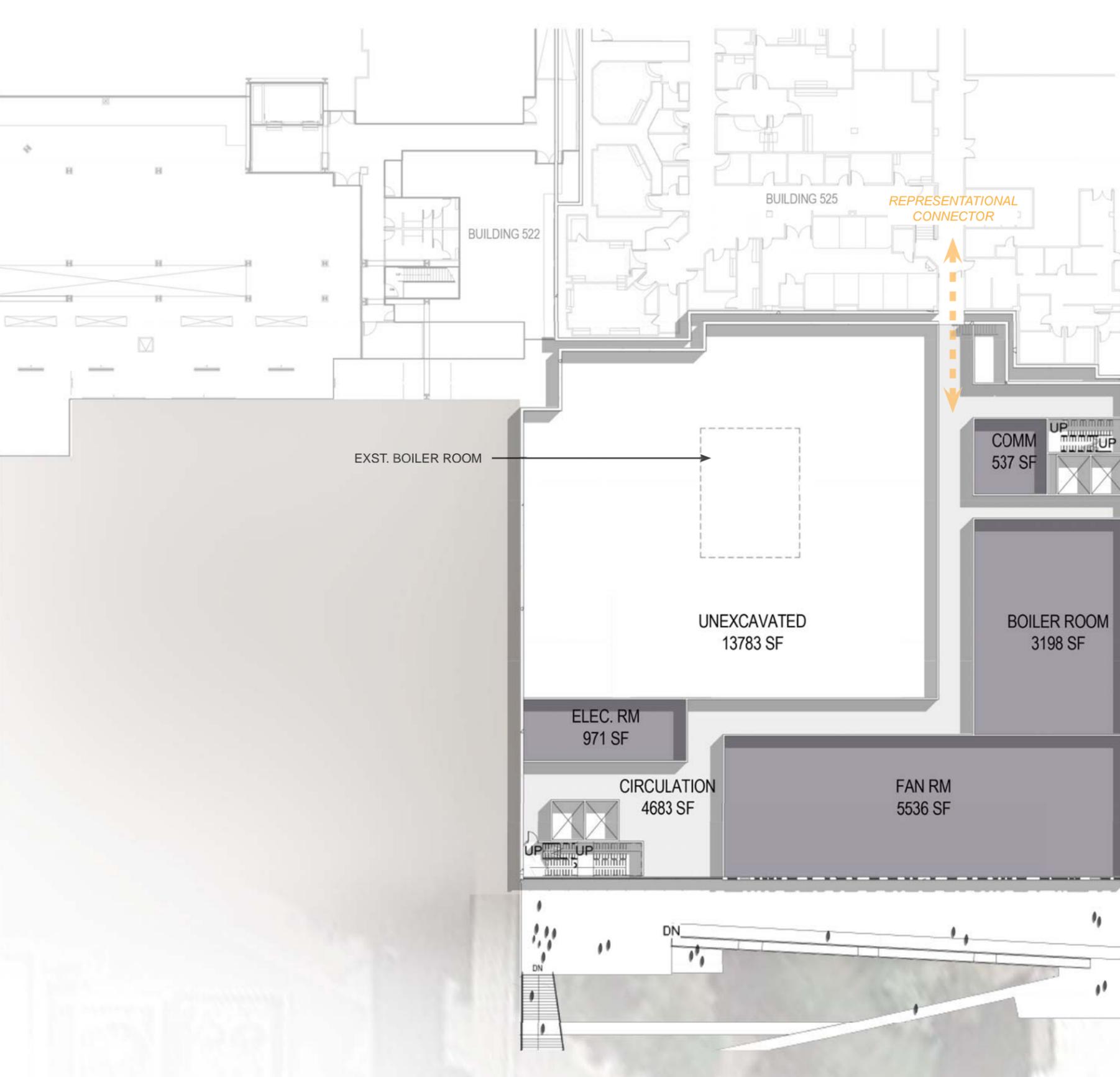
1) Construction a partial lower level BL to house mechanical equipment and the back-up boilers for the hospital that are currently in the proposed building footprint. Level BL of the AAB will tie into Level BL of Building 525 in the SW corner of Building 525.

2) Construct a full lower level BL with a partial lower level mezzanine BU. These levels will correspond to and connect to Levels BL and BU of Building 525. The additional space can be used to satisfy building demand requirements.

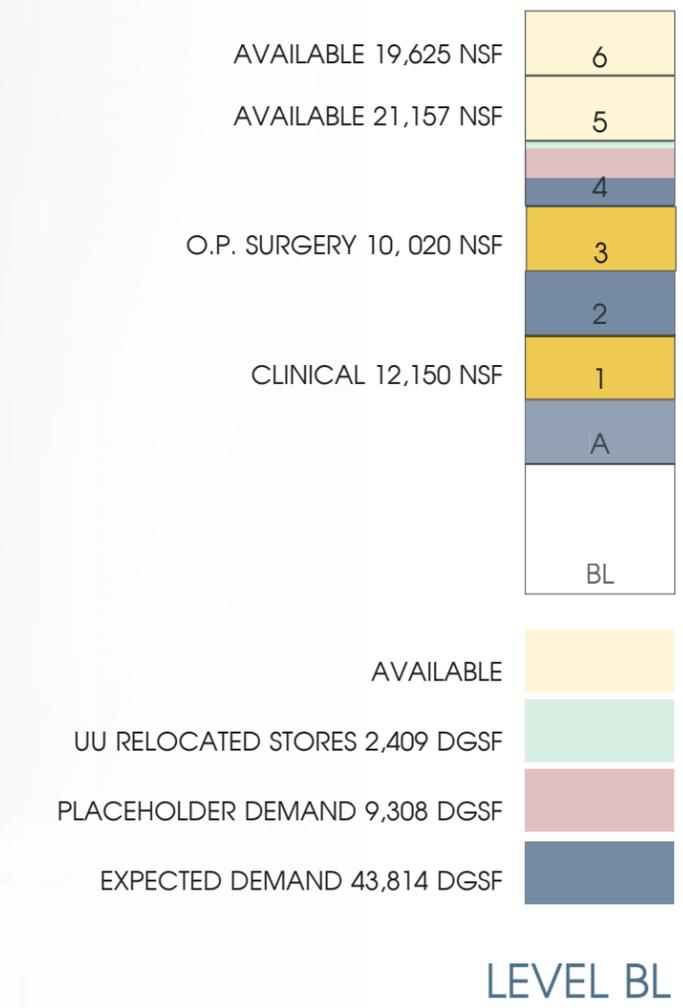
BGSF = Building Gross Square Feet - to the outside of the outside walls of the building.

DGSF = Department Gross Square Feet - to the outside walls of a department.

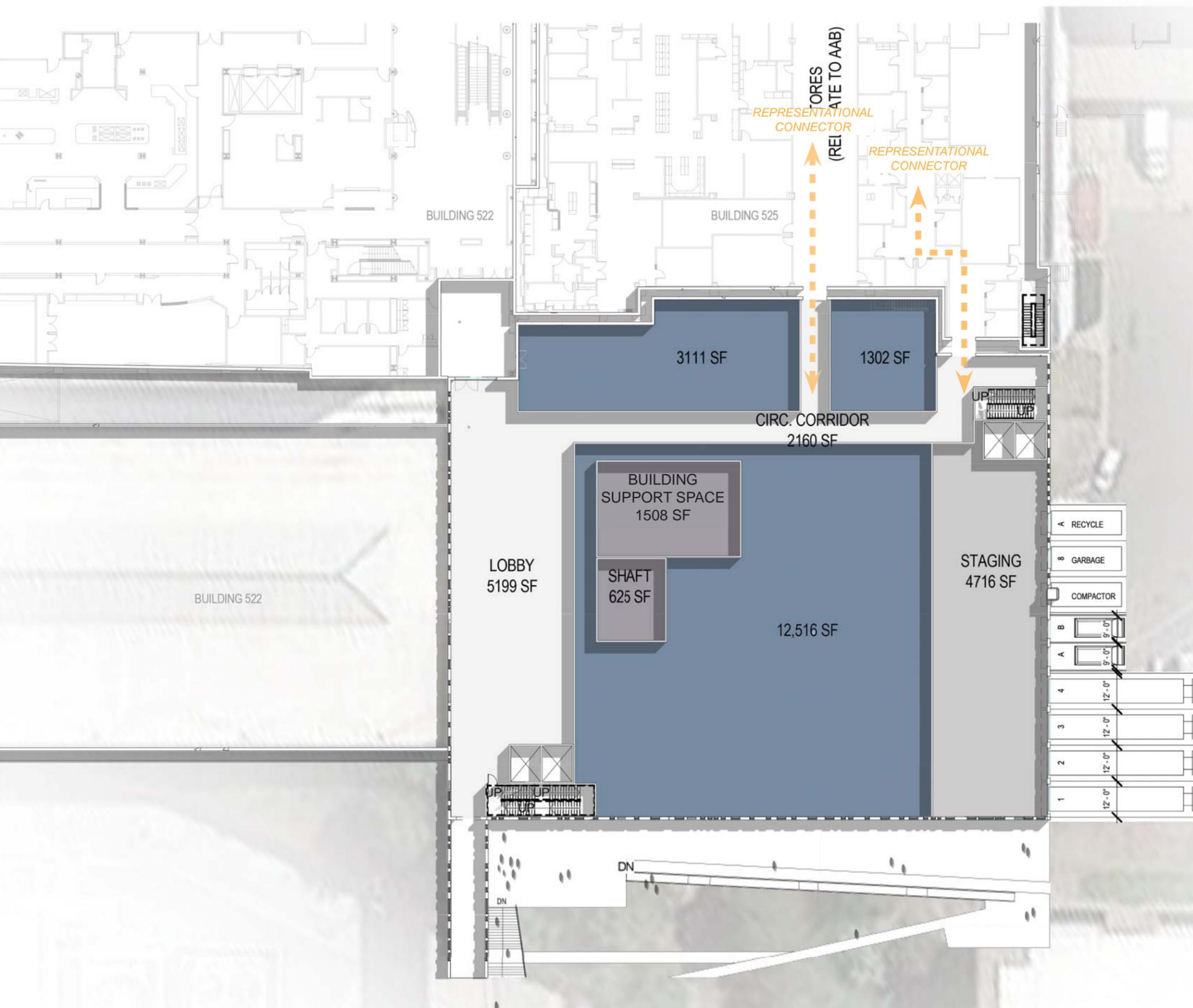
NSF = Net Square Feet - room requirements only area



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	17,211		
Level A	33,189	16,929	16,929
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274



LEVEL BL



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	17,211		
Level A	33,189	16,929	16,929
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274

AVAILABLE 19,625 NSF 6

AVAILABLE 21,157 NSF 5

O.P. SURGERY 10,020 NSF 3

CLINICAL 12,150 NSF 1

AVAILABLE BL

UU RELOCATED STORES 2,409 DG SF

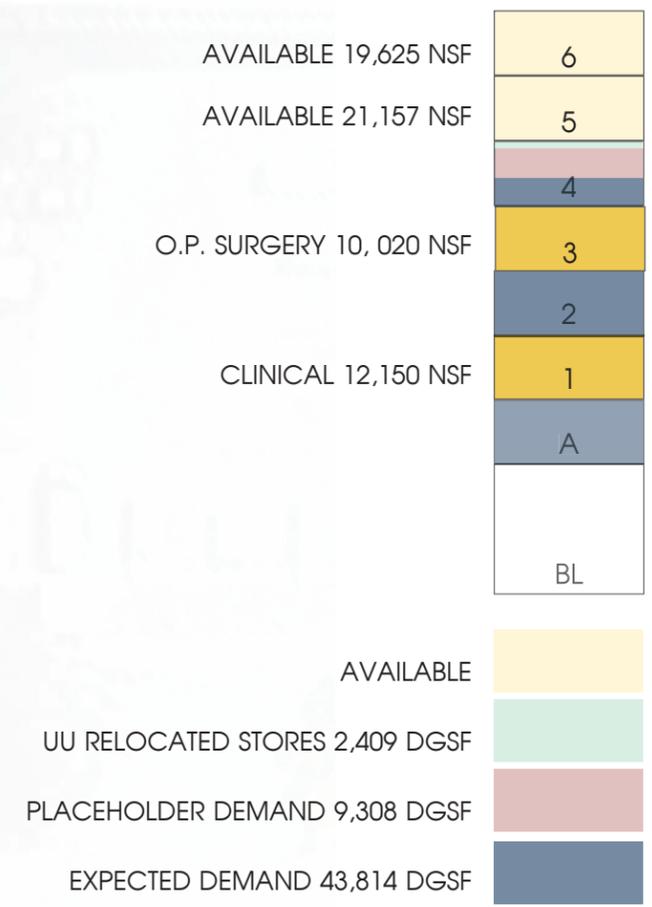
PLACEHOLDER DEMAND 9,308 DG SF

EXPECTED DEMAND 43,814 DG SF

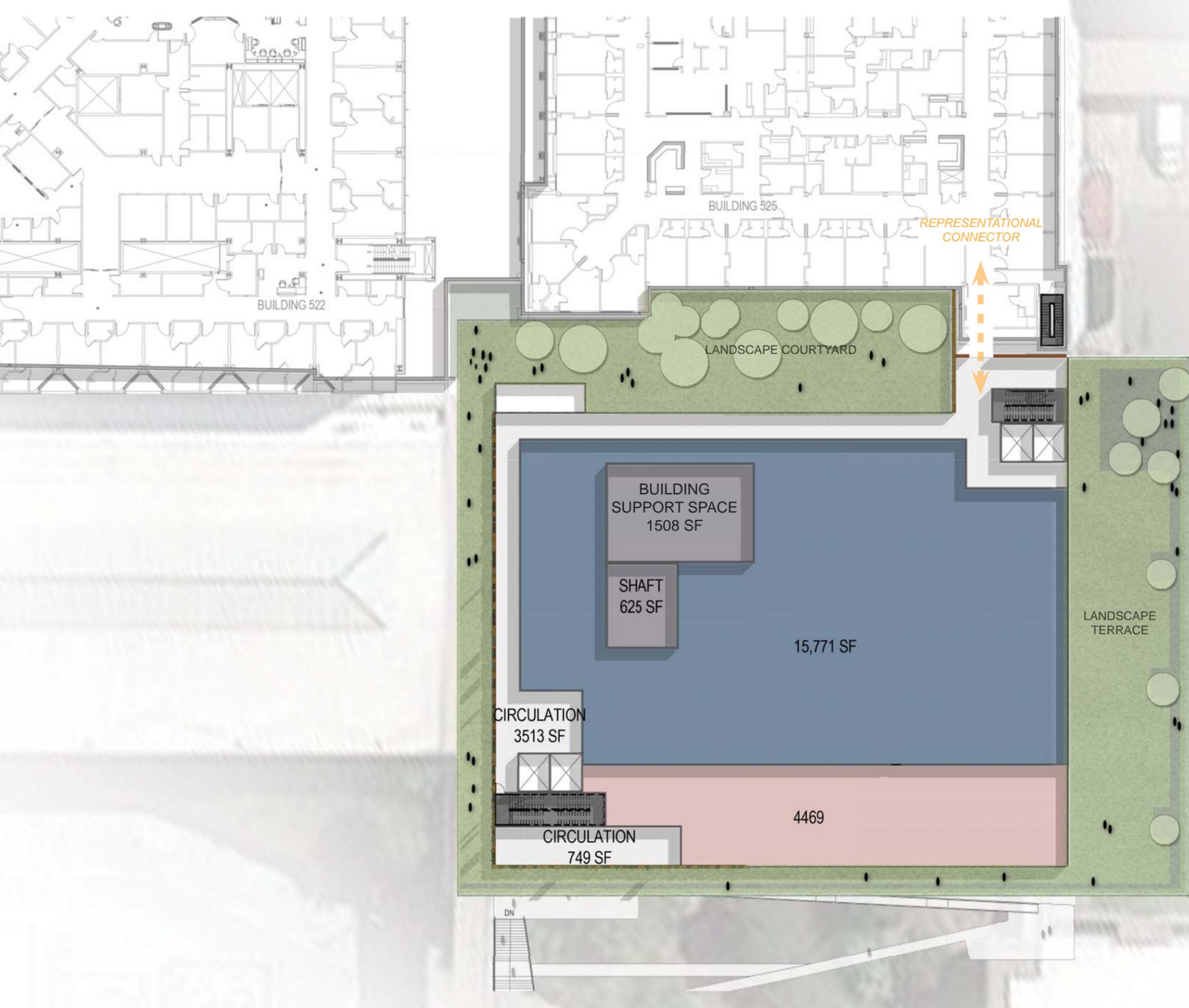
LEVEL A



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	17,211		
Level A	33,189	16,929	16,929
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274



LEVEL 1



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	17,211		
Level A	33,189	16,929	16,929
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
	4
O.P. SURGERY 10,020 NSF	3
	2
CLINICAL 12,150 NSF	1
	A
	BL
AVAILABLE	
UU RELOCATED STORES 2,409 DGsf	
PLACEHOLDER DEMAND 9,308 DGsf	
EXPECTED DEMAND 43,814 DGsf	

LEVEL 2

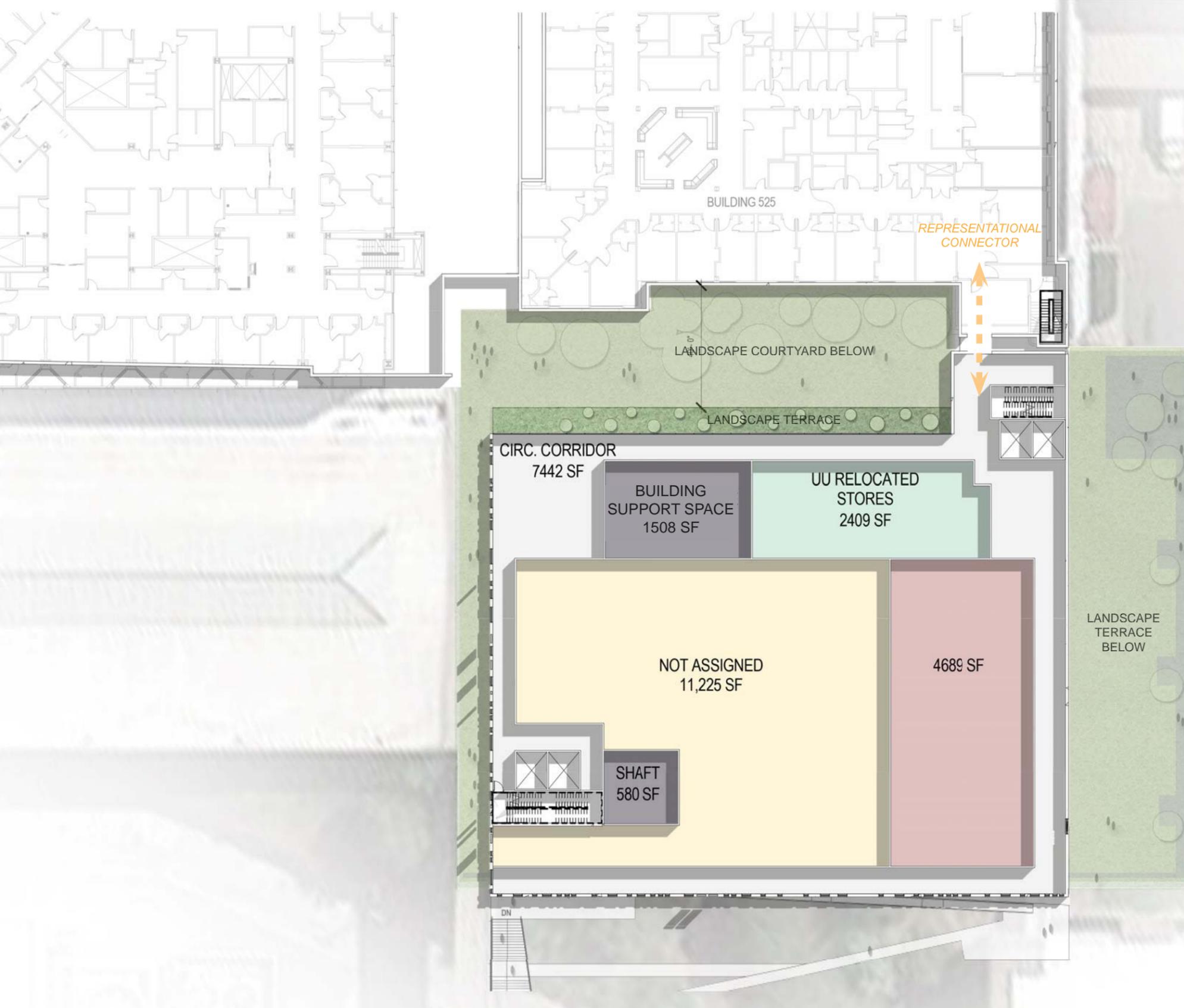


Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	17,211		
Level A	33,189	16,929	16,929
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
	4
O.P. SURGERY 10,020 NSF	3
	2
CLINICAL 12,150 NSF	1
	A
	BL
AVAILABLE	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL 3

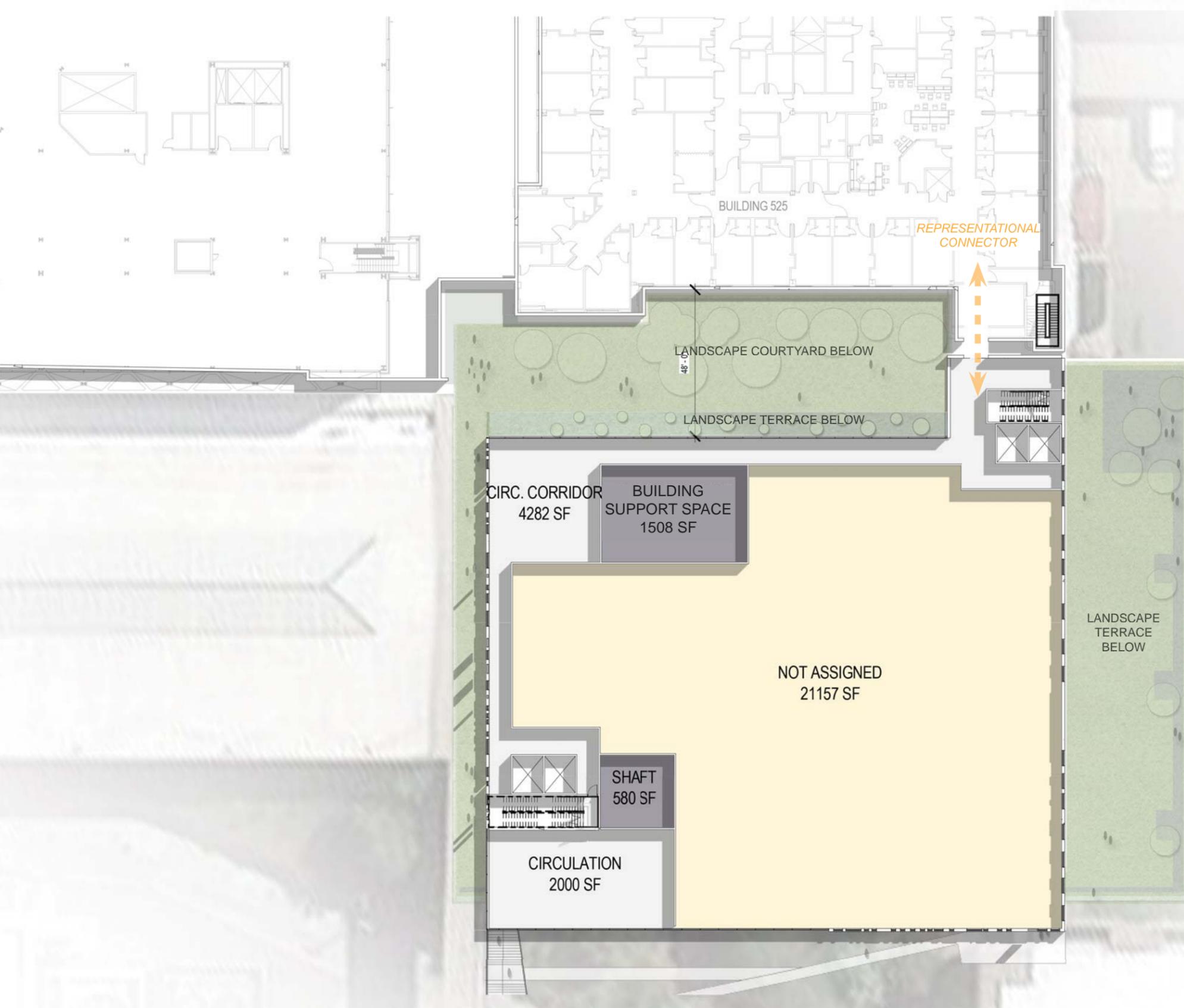
NOTE: LEVEL IS VERY TIGHT



Level	Building Gross SF	Net SF	Cumulative NSF
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Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
	4
O.P. SURGERY 10,020 NSF	3
	2
CLINICAL 12,150 NSF	1
	A
	BL
AVAILABLE	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

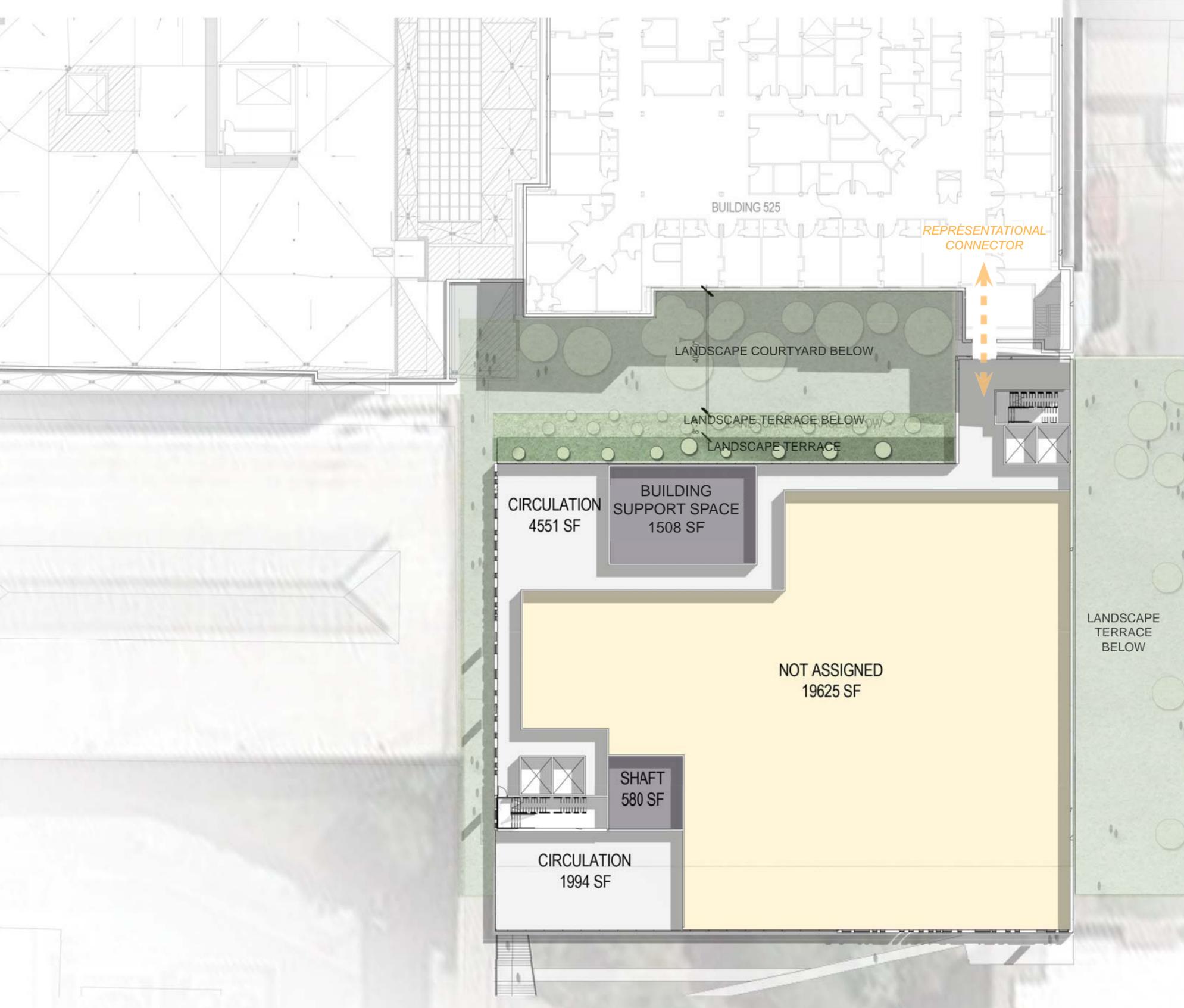
LEVEL 4



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	17,211		
Level A	33,189	16,929	16,929
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
	4
O.P. SURGERY 10,020 NSF	3
	2
CLINICAL 12,150 NSF	1
	A
	BL
AVAILABLE	
UU RELOCATED STORES 2,409 DGsf	
PLACEHOLDER DEMAND 9,308 DGsf	
EXPECTED DEMAND 43,814 DGsf	

LEVEL 5



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	17,211		
Level A	33,189	16,929	16,929
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,240	37,169
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	55,492
Level 5	31,700	21,157	76,649
Level 6	30,494	19,625	96,274

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
	4
O.P. SURGERY 10,020 NSF	3
	2
CLINICAL 12,150 NSF	1
	A
	BL
AVAILABLE	
UU RELOCATED STORES 2,409 DGsf	
PLACEHOLDER DEMAND 9,308 DGsf	
EXPECTED DEMAND 43,814 DGsf	

LEVEL 6

The floor plan studies of Sections 3 and 4 evaluate two options:

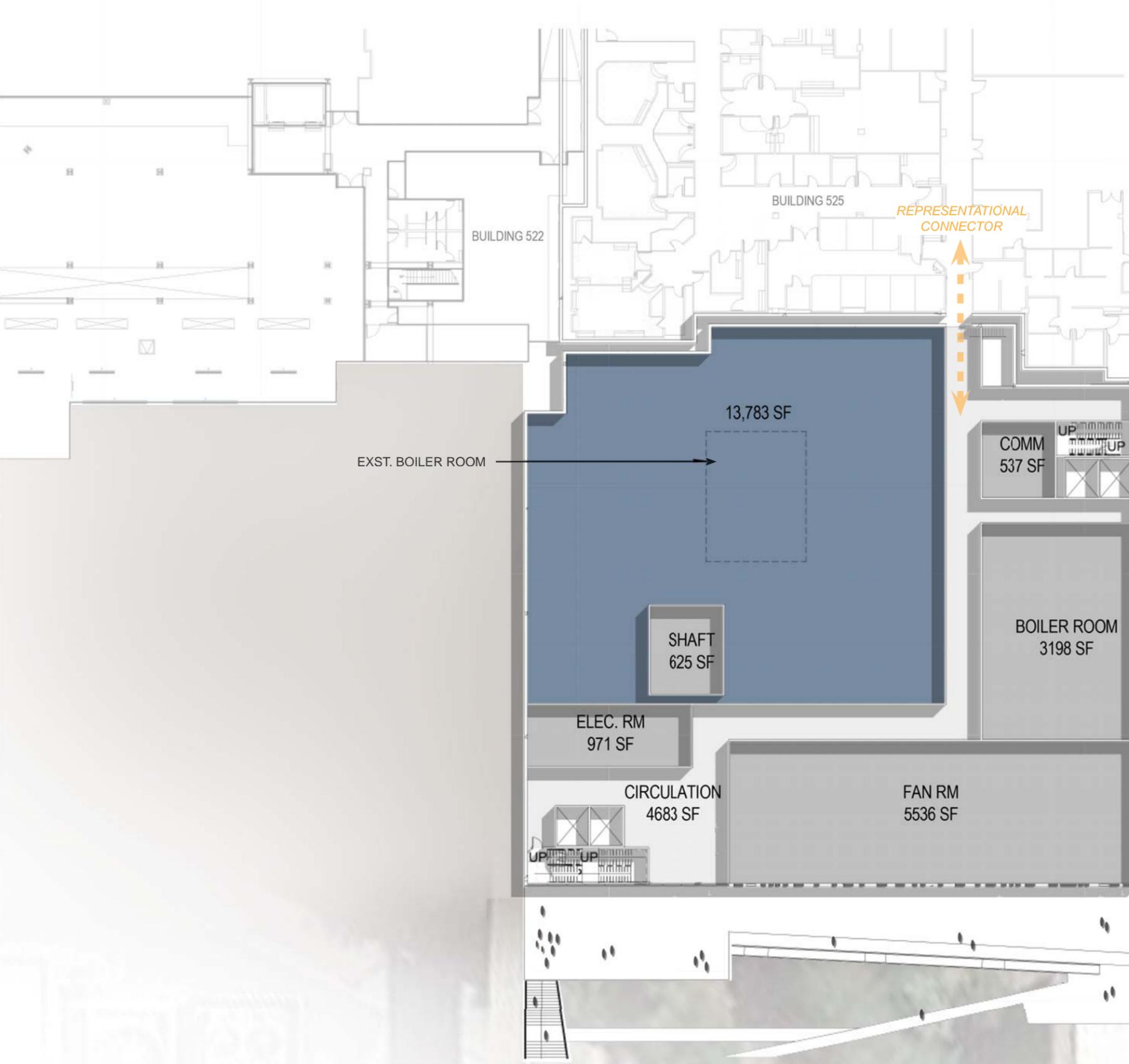
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2) Construct a full lower level BL with a partial lower level mezzanine BU. These levels will correspond to and connect to Levels BL and BU of Building 525. The additional space can be used to satisfy building demand requirements.

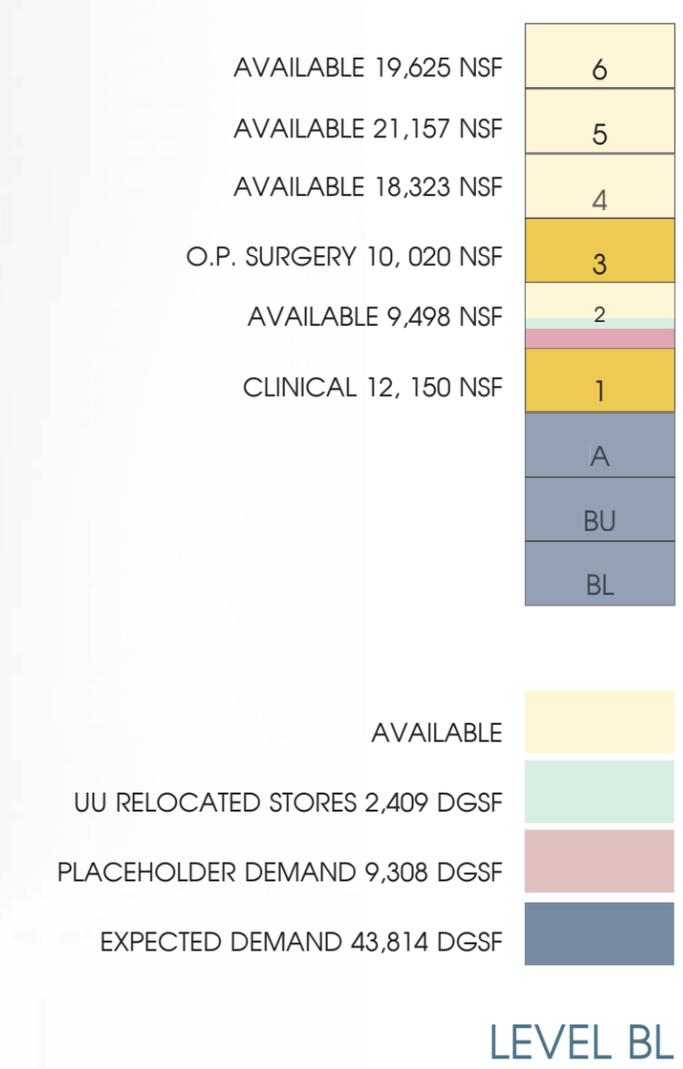
BGSF = Building Gross Square Feet - to the outside of the outside walls of the building.

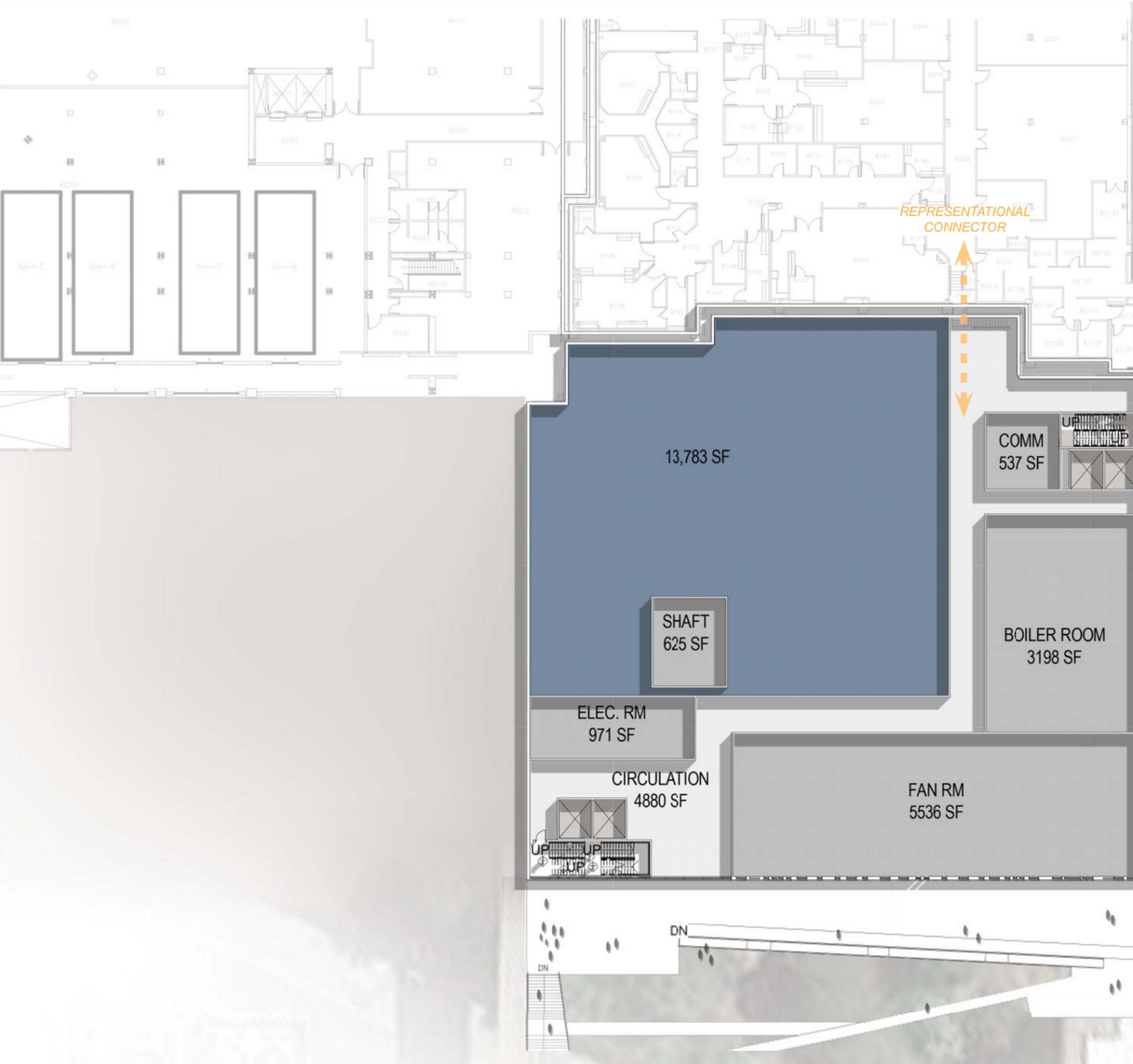
DGSF = Department Gross Square Feet - to the outside walls of a department.

NSF = Net Square Feet - room requirements only area



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134



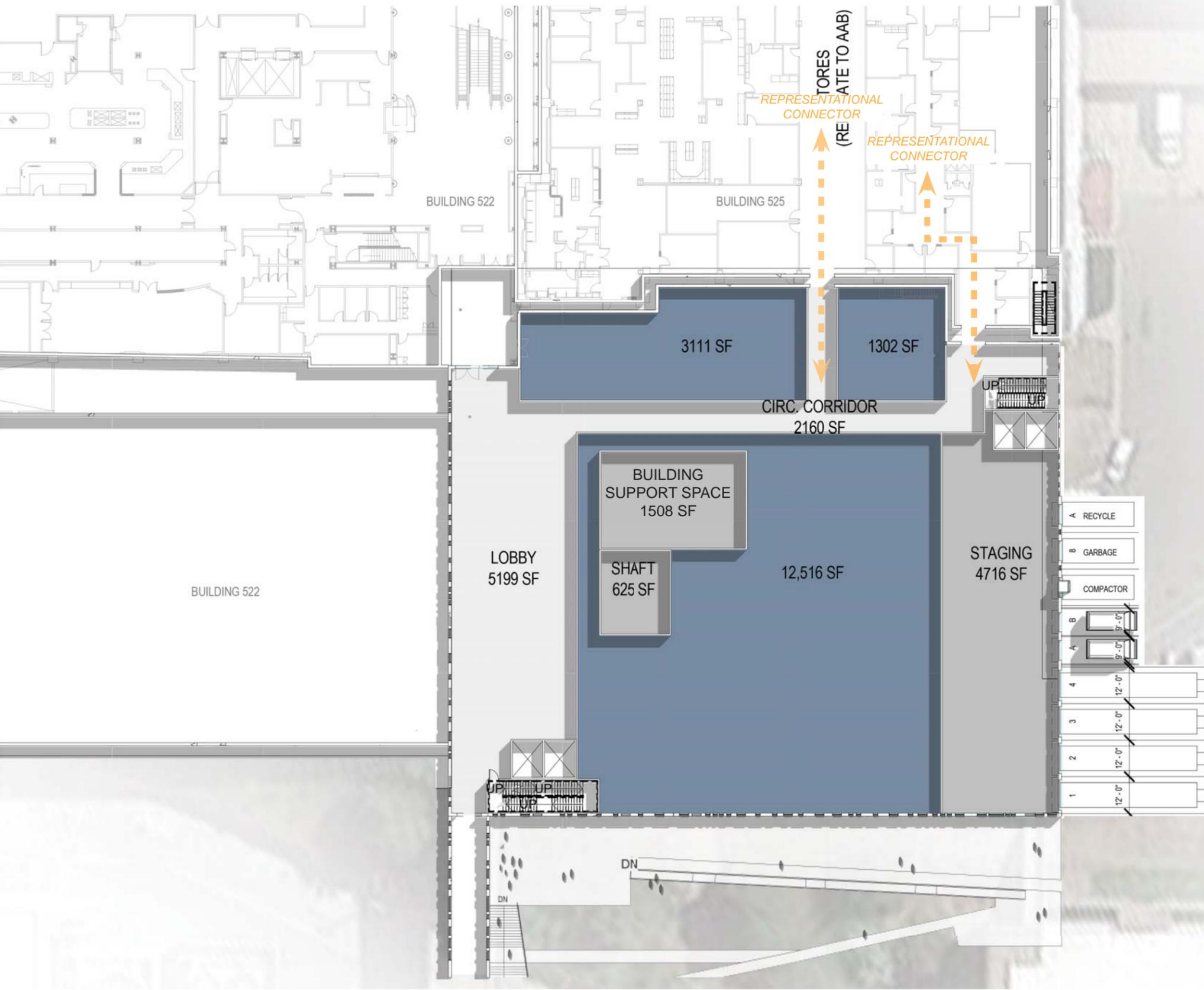


Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
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Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	[Yellow Box]
UU RELOCATED STORES 2,409 DGSF	[Light Green Box]
PLACEHOLDER DEMAND 9,308 DGSF	[Red Box]
EXPECTED DEMAND 43,814 DGSF	[Dark Blue Box]

LEVEL BU



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	[Yellow Box]
UU RELOCATED STORES 2,409 DGSF	[Light Green Box]
PLACEHOLDER DEMAND 9,308 DGSF	[Red Box]
EXPECTED DEMAND 43,814 DGSF	[Dark Blue Box]

LEVEL A

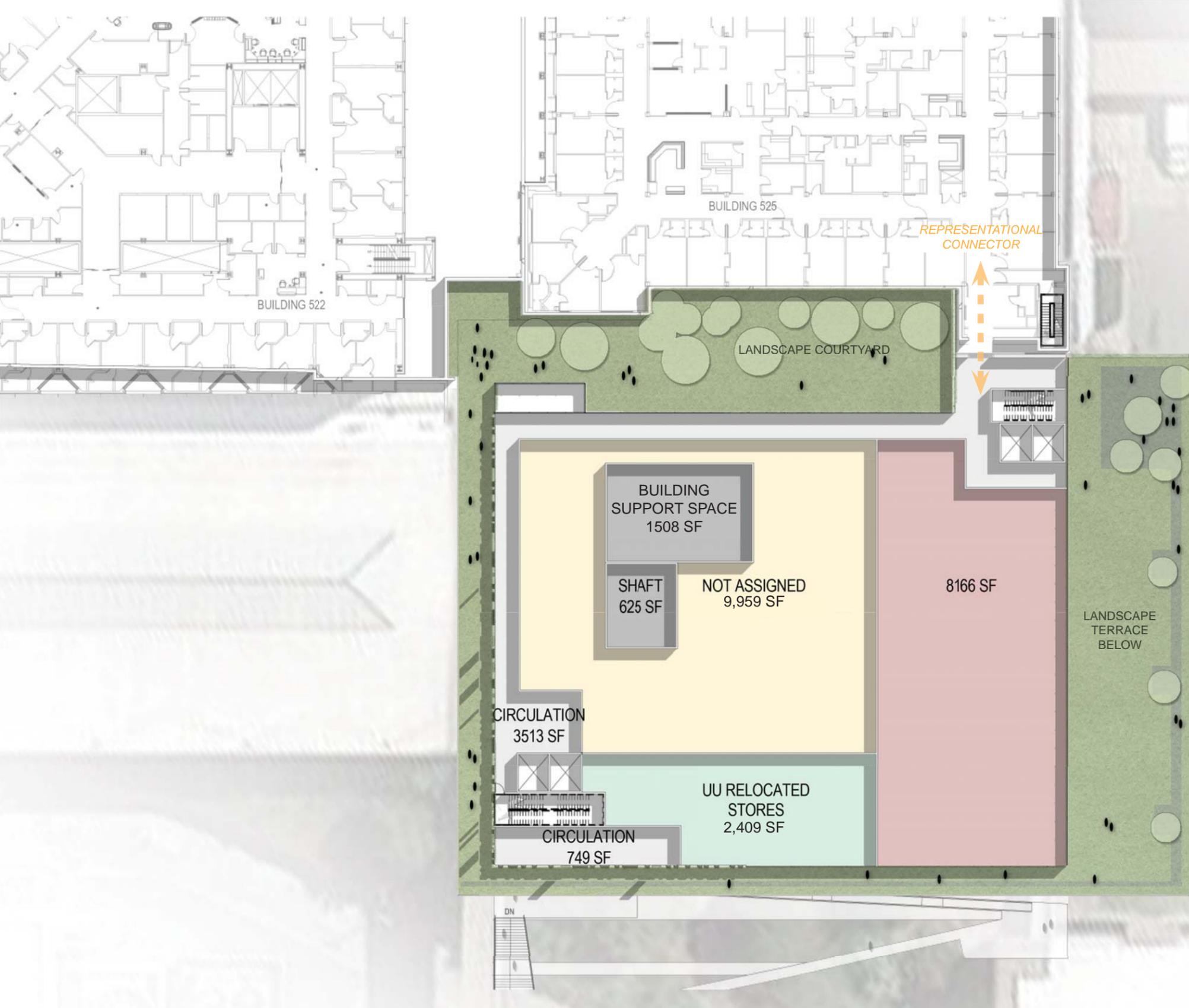


Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	[Yellow Box]
UU RELOCATED STORES 2,409 DGsf	[Light Green Box]
PLACEHOLDER DEMAND 9,308 DGsf	[Red Box]
EXPECTED DEMAND 43,814 DGsf	[Dark Blue Box]

LEVEL 1

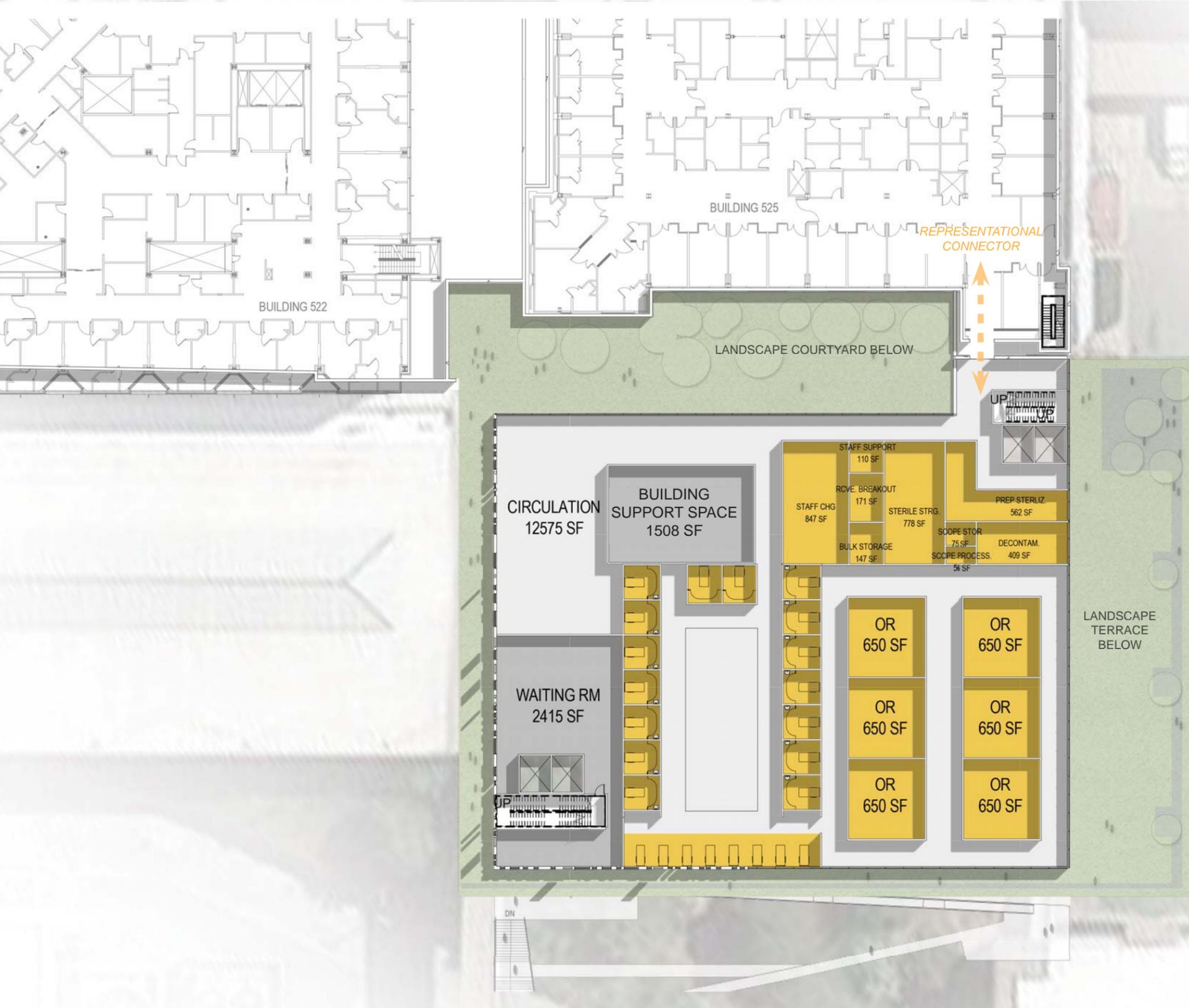


Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL 2

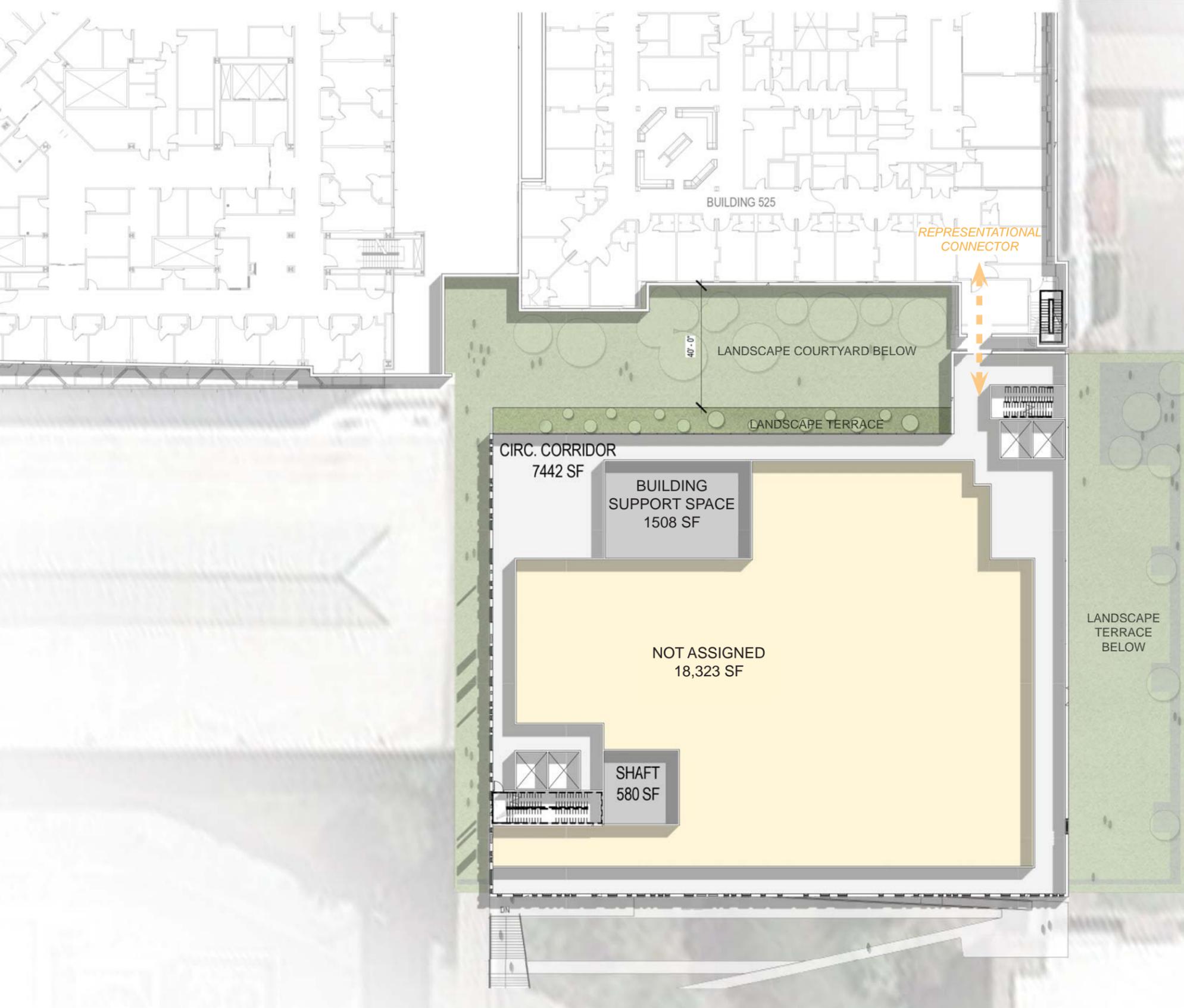


Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

NOTE: LEVEL IS VERY TIGHT **LEVEL 3**

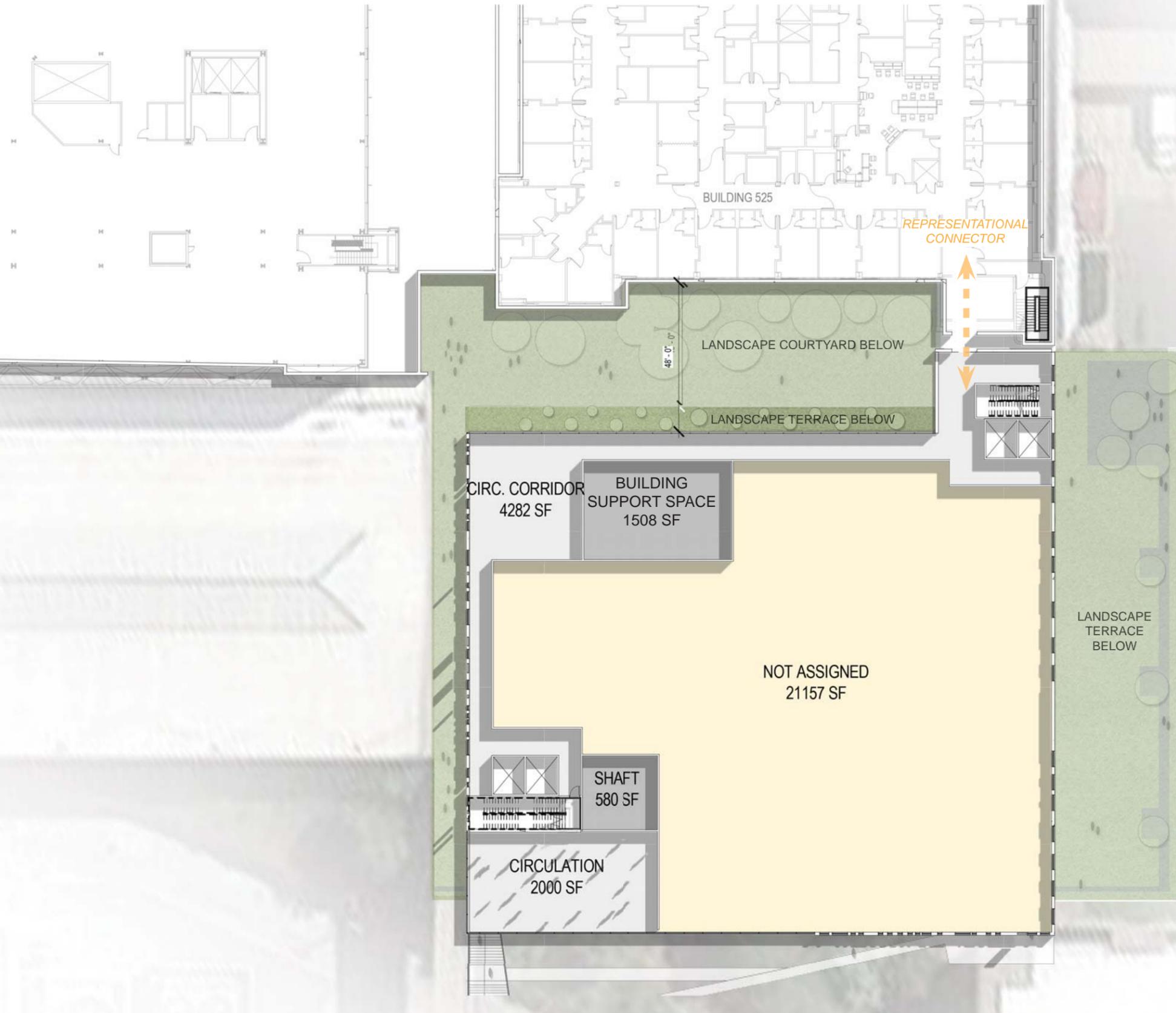


Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	
UU RELOCATED STORES 2,409 DGsf	
PLACEHOLDER DEMAND 9,308 DGsf	
EXPECTED DEMAND 43,814 DGsf	

LEVEL 4



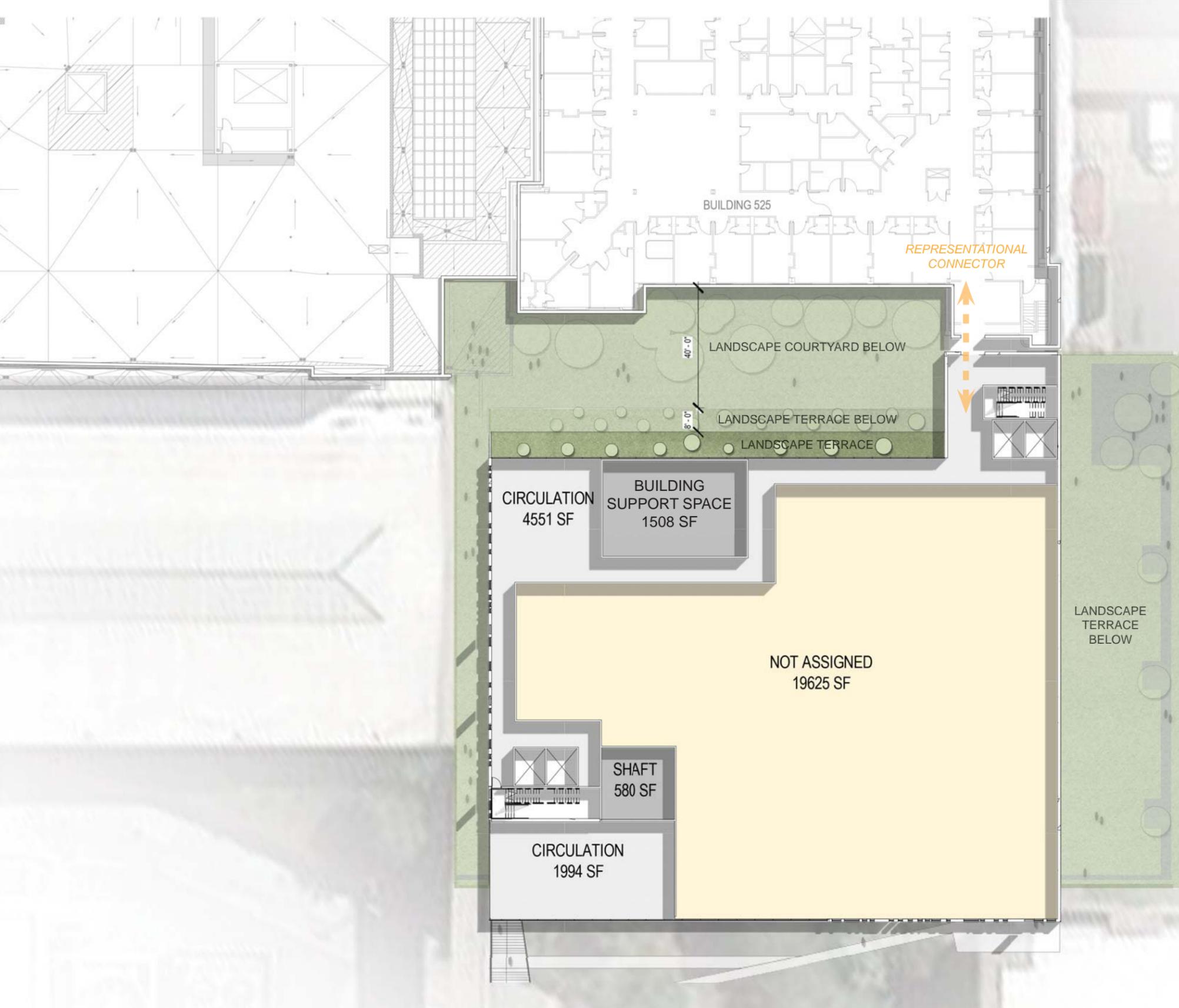
Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL 5

FLOOR PLAN STUDY - TWO LEVEL BASEMENT



Level	Building Gross SF	Net SF	Cumulative NSF
Level BL	31,670	13,783	13,783
Level BU	14,459	13,783	27,566
Level A	33,189	16,929	44,495
Level 1	28,705	Clinical	Clinical
Level 2	29,124	20,534	65,029
Level 3	29,124	O.P. Surgery	O.P. Surgery
Level 4	29,830	18,323	83,352
Level 5	31,700	21,157	104,509
Level 6	30,494	19,625	124,134

AVAILABLE 19,625 NSF	6
AVAILABLE 21,157 NSF	5
AVAILABLE 18,323 NSF	4
O.P. SURGERY 10,020 NSF	3
AVAILABLE 9,498 NSF	2
CLINICAL 12,150 NSF	1
	A
	BU
	BL

AVAILABLE	
UU RELOCATED STORES 2,409 DGSF	
PLACEHOLDER DEMAND 9,308 DGSF	
EXPECTED DEMAND 43,814 DGSF	

LEVEL 6

FLOOR PLAN STUDY - TWO LEVEL BASEMENT

Three building configurations are being evaluated - three stories, four stories, and seven stories. Each configuration has the option of a partial or full basement. Three additional options have been included for the seven story configuration based on the intended use of the upper levels of the building.

BUILDING SUMMARY DIAGRAMS

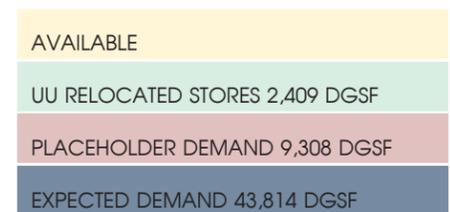
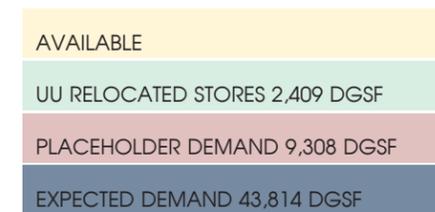
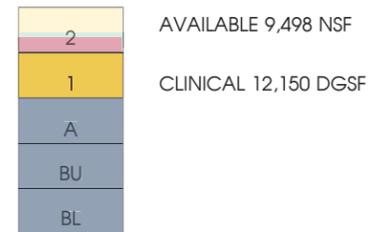
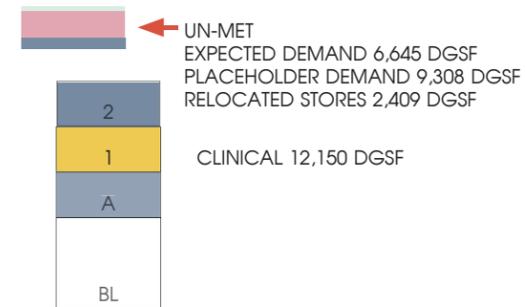
DATA

THREE STORY BUILDING (LEVELS A, 1, 2)
WITH BASEMENT MECHANICAL SPACE
GENERAL USE ON LEVELS A AND 2
CLINICAL SPACE ON LEVEL 1

OPTION 1 PARTIAL BASEMENT
108,229 BGSF
\$54,788,451 TOTAL PROJECT COST

OPTION 1A FULL BASEMENT ADD
137,147 BGSF
\$65,346,786 TOTAL PROJECT COST

NOTE: OPTION 1 DOES NOT MEET PLACEHOLDER DEMAND REQUIREMENTS



1

1A



DATA

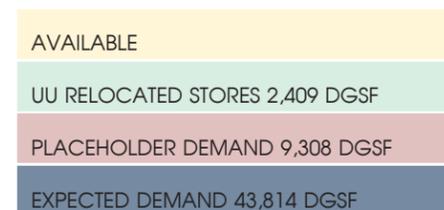
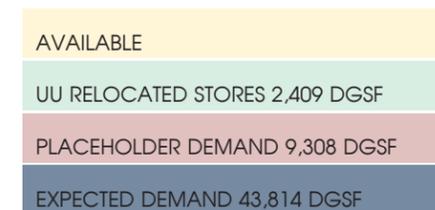
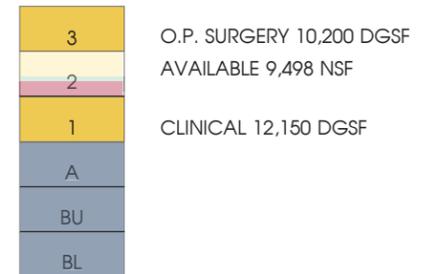
FOUR STORY BUILDING (LEVELS A, 1, 2, 3)
 WITH BASEMENT MECHANICAL SPACE
 GENERAL USE ON LEVELS A AND 2
 CLINICAL SPACE ON LEVEL 1
 OUTPATIENT SURGERY ON LEVEL 3

OPTION 2 PARTIAL BASEMENT
 137,353 BGSF
 \$68,963,170 TOTAL PROJECT COST

OPTION 2A FULL BASEMENT ADD
 166,271 BGSF
 \$79,521,505 TOTAL PROJECT COST

NOTE: OPTION 2 DOES NOT MEET PLACEHOLDER DEMAND REQUIREMENTS

UN-MET
 EXPECTED DEMAND 6,645 DGSF
 PLACEHOLDER DEMAND 9,308 DGSF
 RELOCATED STORES 2,409 DGSF



2

2A

DATA

SEVEN STORY BUILDING (LEVELS A, 1-6)
 WITH BASEMENT MECHANICAL SPACE
 GENERAL USE ON LEVELS A AND 2
 CLINICAL SPACE ON LEVEL 1, 4, 5, 6
 OUTPATIENT SURGERY ON LEVEL 3

OPTION 3 PARTIAL BASEMENT
 229,377 BGSF
 \$113,240,506 TOTAL PROJECT COST

OPTION 3A FULL BASEMENT ADD
 258,295 BGSF
 \$123,798,841 TOTAL PROJECT COST



6	CLINICAL 19,625 NSF
5	CLINICAL 21,157 NSF
4	CLINICAL 18,323 NSF
3	O.P. SURGERY 10,200 DGSF
2	CLINICAL 9,498 NSF
1	CLINICAL 12,150 DGSF
A	
BL	

6	CLINICAL 19,625 NSF
5	CLINICAL 21,157 NSF
4	CLINICAL 18,323 NSF
3	O.P. SURGERY 10,200 DGSF
2	CLINICAL 9,498 NSF
1	CLINICAL 12,150 DGSF
A	
BU	
BL	

CLINICAL
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

CLINICAL
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

3

3A

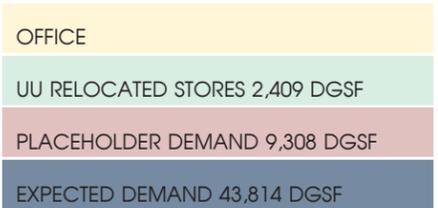
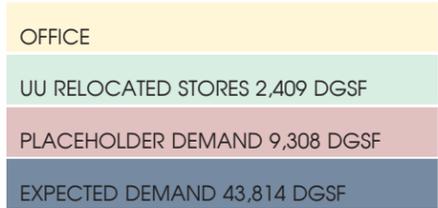
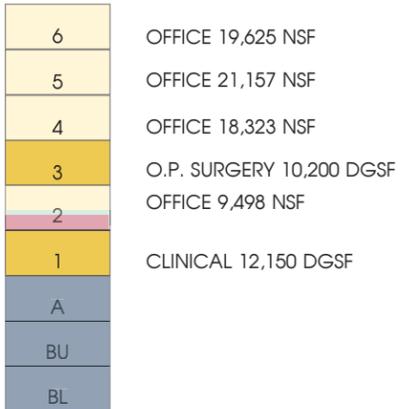
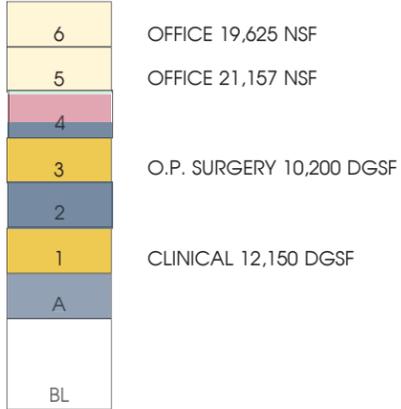
OPTION 3, 3A SEVEN STORY BUILDING

DATA

SEVEN STORY BUILDING (LEVELS A, 1-6)
 WITH BASEMENT MECHANICAL SPACE
 GENERAL USE ON LEVELS A AND 2
 CLINICAL SPACE ON LEVEL 1
 OUTPATIENT SURGERY ON LEVEL 3
 OFFICE SPACE ON LEVEL 4, 5, 6

OPTION 4 PARTIAL BASEMENT
 229,377 BGSF
 \$102,364,823 TOTAL PROJECT COST

OPTION 4A FULL BASEMENT ADD
 258,295 BGSF
 \$112,923,158 TOTAL PROJECT COST



4

4A

OPTION 4, 4A SEVEN STORY BUILDING

DATA

SEVEN STORY BUILDING (LEVELS A, 1-6)
 WITH BASEMENT MECHANICAL SPACE
 GENERAL USE ON LEVELS A AND 2
 CLINICAL SPACE ON LEVEL 1
 OUTPATIENT SURGERY ON LEVEL 3
 SHELLED SPACE ON LEVEL 4, 5, 6

OPTION 5 PARTIAL BASEMENT
 229,377 BGSF
 \$89,182,307 TOTAL PROJECT COST

OPTION 5A FULL BASEMENT ADD
 258,295 BGSF
 \$99,740,642 TOTAL PROJECT COST



6	SHELLED 19,625 NSF
5	SHELLED 21,157 NSF
4	SHELLED 18,323 NSF
3	O.P. SURGERY 10,200 DGSF
2	SHELLED 9,498 NSF
1	CLINICAL 12,150 DGSF
A	
BL	

6	SHELLED 19,625 NSF
5	SHELLED 21,157 NSF
4	SHELLED 18,323 NSF
3	O.P. SURGERY 10,200 DGSF
2	SHELLED 9,498 NSF
1	CLINICAL 12,150 DGSF
A	
BU	
BL	

SHELLED
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

SHELLED
UU RELOCATED STORES 2,409 DGSF
PLACEHOLDER DEMAND 9,308 DGSF
EXPECTED DEMAND 43,814 DGSF

5

5A

Space planning assumptions

Code analysis

Mechanical analysis

Geotechnical report

Cost opinion

SUPPORT DOCUMENTS

Ambulatory and Administration Building (AAB) Space Planning

Hospital Administrative & Support Services in 521

Department	Space Planning Database Description	Current	Head Count	Current	Proposed	522/529	525	AAB Expected	AAB Placeholder	Rehab Hospital	Offsite
		sqft (net)		department sqft (gross)							
ECHO / Telemedicine			5	2,300	1,500						
F & E Support & Shop space	UH Biomedical Engineering Svcs; UH Fac &	12,356	42	25,746	19,093						
Nursing Resource (Moved to New EM Space 1008 sqft)	UH Resource Nursing	485	120	898	931						
BMT Clinical Support / Quality & Patient Safety	UH BMT Coordinators	795		1,000	1,000				1,000		
Case Management	UH OMC-Case Management	1,450	17	1,465	1,321			1,321			
Clinical Documentation Improvement (CDI) - Nurses			13		700			700			
Emergency Management			4	1,511	1,511			1,511			
Environmental Services	UHU Environmental Services	3,624	240	4,343	4,343			4,343			
Linen Services	UHU Laundry and Linen	7,384		10,351	10,351			10,351			
F & E Admin	UH Fac & Eng - Director's Office	2,570	above	-	4,076				4,076		
H&I Lab	UH H&I Lab	2,330	11	4,690	4,690			4,690			
Health Information Dept	UH Health Information Dept	below	3	-	100				100		
Hospital Infection Control	UH Employee Infection Control & UH Infect	783	12	1,600	863			863			
Human Resources	(see below)		12	-	1,000			1,000			
ID Bureau (include Paging serv. in area)			10	280	350				350		
IT Training	UH ITS Administrative	820	9	800	800			800			
ITS & Storage			4	830	556			556			
Morgue			HIM	209	1,300			1,300			
Prisoner Holding Area	UH Hospital Security	131		150	150				150		
Touchdown Space	(new)			-	9,000			9,000			
Transplant Administration / LVAD (offices & storage)	UH Transplant Svcs Admin	6,751	68	8,285	7,379			7,379			
Clinical Documentation Improvement (CDI)			10	1,260	532						532
Exceptional Patient Experience/Value Engineering			13	1,340	1,730						1,730
Health Information Dept	UH Health Information Dept	5,445	51	7,890	5,516						5,516
Human Resources & Organizational Development	UHU Executive Offices, Human Resources	6,683	36	4,867	4,175						4,175
Nursing Informatics			12	650	936						936
Perinatal Education	UH Perinatal Patient Ed Program	197	12	220	239						239
Risk Management	UH Risk Management	974	9	1,165	1,038						1,038
		52,778		81,850	85,180	21,524	-	43,814	5,676	-	14,166 #

Might be accommodated in 522

Might be accommodated in 525

Might be accommodated in MED

Hospital Diagnostic & Patient Care Services in 521

Department	Space Planning Database Description	Current	Head Count	Current	Proposed	522/529	525	AAB Expected	AAB Placeholder	Rehab Hospital	Offsite
		sqft (net)		department sqft (gross)							
Acute Dialysis	UH Acute Adult Dialysis	734	12	850	700	700					
Angio/Interventional Radiology	UH Nuclear Medicine & UH Radiology Spec	3,624		3,550	1,352				1,352		
EEG	UH Electroencephalography - EEG	2,009	15	2,280	2,280				2,280		
Pediatric Dialysis	UH Pediatric Dialysis	83			83						83
5 West Med-Psych Unit	UH Psychiatry - Acute Unit 5 W	7,348		11,007			TBD				
5 West - TB Unit	UH Tuberculosis Unit	1,463					TBD				
Acute Rehabilitation	UH General Acute Rehabilitation	722								722	
Miners Hospital	UH Miners Hospital	927								927	
Pharmacy - Rehab	UH Pharmacy - Inpatient	72								72	
Social Services	UH Social Services	819								819	
Rehabilitation Therapies	UH Rehab Center Therapies	4,118								4,118	
Rehabilitation Administration	UH Rehabilitation Svcs Admin	412								412	
Rehabilitation Unit	UH Rehabilitation Unit	1,549								1,549	
		23,880				700	-	-	3,632	8,619	83

Hospital Clinics in 521, 525 and the 3 West OR/Procedure

Department	Space Planning Database Description	Current	Head Count	Current	Proposed	522/529	525	AAB Expected	AAB Placeholder	Rehab Hospital	Offsite
		sqft (net)		department sqft (gross)							
521 3 West OR/Procedure	UH Operating Room & UH PACU	1,564		1,000	2,000				2,000		
521 Dental Clinic	UH Dental Clinic	1,681		1,844	1,844				400		1,444
521 Dermatology & Moh's	UH Dermatology Clinic	4,261		2,466	4,000				4,000		
521 Employee Health Center	UHU CST 34D Employee Health Ctr	1,950		2,937	1,000		1,000				
521 ENT Clinic	UH ENT Clinic	5,072		7,659	7,200				7,200		
521 OB/Gyn Clinic	UH OB/Gyn Clinic	3,506		3,941	3,100		3,100				
521 Pediatric Clinic	UH Pediatric Clinic	2,835		3,819	3,100				3,100		
521 Physical Medicine & Rehab Clinic	UH Physical Med & Rehab Clinic	1,154		1,200	1,300				1,300		
521 Rehabilitation Specialty Clinics	UH Rehab Specialty Clinics	2,398		2,400	2,500				2,500		
521 Surgery/Bariatrics/Plastics	UH Surgery Clinics	5,332		7,371	7,000				7,000		
521 Thrombosis Clinic				960	960						960
521 Urology/Pelvic Care	UH Urology Center	3,466		5,365	5,000				5,000		
521 Vascular Lab	UH Vascular Laboratory	1,370		1,265	1,000				1,000		
525 Allergy Clinic				677	677		677				
525 Cardiovascular Clinic				9,511	7,511		7,511				
525 Faint & Fall Clinic				850	850		850				
525 Gastroenterology Clinic				2,313	2,100				2,100		
525 Geriatrics Clinic				677	677						677
525 Infectious Disease Clinic				2,816	2,500		2,500				
525 Infusion Center				1,211	1,211		1,211				
525 Internal Medicine/Rheumatology Clinic				4,823	4,823						4,823
525 Pulmonary Clinic				2,313	2,000		2,000				
525 Travel Clinic				677	677						677
		34,589		68,095	63,030	-	25,749	-	28,700	-	8,581

capacity 25,868
 43,814
 9,308
 28,700

Expected to be located in AAB
 Administrative, support services, diagnostics, patient care services placeholder location in AAB
 Clinical placeholder location in AAB



Memo

Date: May 8, 2014
 To: David Daining
 From: John Leggett
 RE: University of Utah Health Care
 Ambulatory & Administration Building - Core & Shell
 Code Analysis

2012 International Building Code

IBC Section 304 - Business Group B

IBC 304.1 Business Group B occupancies includes: Ambulatory Care Facilities.

IBC 202 Definitions - Ambulatory Care Facilities: Buildings or portions used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation by the services provided.

IBC Section 422 - Ambulatory Care Facilities

IBC 422.2 - Separation: Ambulatory care facilities, where 4 or more persons are to be incapable of self-preservation at any time (etc.) shall be separated from adjacent spaces, corridors or tenants with a fire partition installed in accordance with Section 708.

IBC 708.3 - Fire partitions shall have a fire resistance rating of at least one hour.

IBC 422.3 - Smoke Compartments - where aggregate area of one or more ambulatory health care facilities is greater than 10,000 SF on one story, the story shall be provided with a smoke barrier to subdivide the story into no fewer than two smoke compartments.

- The area of each smoke compartment shall be no greater than 22,500 SF.
- Travel distance from any point in a smoke compartment to a smoke barrier door shall be no greater than 200 FT.

IBC 422.4 - Refuge Area: Not less than 30 SF for each non-ambulatory care patient shall be provided (in qualified areas) in each smoke compartment. Each occupant of an ambulatory care facility shall be provided with access to a refuge without passing through adjacent tenant spaces.

IBC 422.5 - Independent Egress: A mean of egress shall be provided from each smoke compartment created by smoke barriers, without having to return through the smoke compartment from which means of egress originated.

- IBC 202 - Means of Egress: A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way, consisting of: exit access; exit; and exit discharge.

IBC 422.6 - Automatic sprinklers required for ambulatory care facilities.

420 East South Temple, Suite 100 . Salt Lake City . Utah . 84111 . 801.595.6700 . Fax 801.595.6717 . www.mhtn.com

05/08/14 - 9:00 AM

C:\Users\JohnL\Documents\UUHC - AAB - Code Analysis\UUHC - AAB Code Analysis.doc

IBC 422.7 - Fire alarm system required for ambulatory care facilities.

IBC 1004.1.2 - Occupant Load: B Occupancy = 100 occupants/GSF

IBC 1005.3.1 - Stairways, minimum egress width: 0.3" per occupant

- Maximum floor area: 32,500 GSF ÷ 100 = 326 occupants
- 326 ÷ 2 = 163 per stair x .03" = 48.9"
- Exception: In other than H or I-2 occupancies, 0.2" per occupant in buildings with sprinklers and fire alarm system.

IBC 1005.3.2 - Other means of egress components, 0.2" per occupant

- 163 x .02" = 32.6"

IBC 508.4 - Separated Occupancies

- IBC Table 508.4 - Separation of B and I-2 occupancies requires 2-hour fire rating in buildings with sprinklers.
- Separation between I-2 and non-sprinkled B occupancy is not permitted.

IBC 503.1.2 - Buildings on the same lot shall be regulated as separate buildings or part of one building, if the height of each building and aggregate area are within limitations of Table 503, as modified by 504 & 506.

IBC Table 503 for Group B

Type of Construction	Height in Stories	Height in Feet	Area
1A	UL	UL	UL
1B	11	160	UL
2A	5	65	37,500

IBC 504.2 Automatic Sprinklers, increase height by 20 FT & one story.

- Does not apply to I-2 occupancies

IBC 506.2 & 506.3 - Building Area Modifications

IBC 506.2 Building frontage on a public way (See formula)

IBC 506.3 - Automatic Sprinkler Increase: Building area limitations increased by 20% for buildings with more than one story above grade.

IBC Table 602 - Fire-Resistance for Exterior Walls, Based on Separation

Distance	Fire Rating for I & B
Less than 5 FT	1 hour
5 FT - less than 10 FT	1 hour
10 FT - less than 30 FT	1 hour
More than 30 FT	0 hour

IBC 706.1 - Fire rating for party walls = 3 hours

IBC Table 705.8 - Maximum Area of Exterior Wall Openings

Separation Distance		
0 FT - less than 3 FT		NP
3 FT - less than 5 FT	Unprotected, sprinkled	15%
5 FT - less than 10 FT	Sprinkled, protected or non	25%
10 FT - less than 15 FT		45%

15 FT - less than 20 FT	75%
20 FT - less than 25 FT	UL

IBC Sections 706 - Fire Walls

IBC 706.1 - Each portion of a building separated by one or more fire walls shall be considered a separate building.

IBC 706.1.1 Party Walls

IBC 706.4 - Fire Wall fire-resistance rating = 3 hours (Types I & B)

IBC 706.5 - Fire Walls are to extend at least 18" past exterior wall.
 • Exception 1 - Can terminate inside a 1-hour F.R.R. exterior wall (inside sheathing).

IBC Sections 403 - High-Rise Buildings

IBC 403.2.3 - For buildings of risk category III or IV, comply with 403.2.3.1-4.

IBC 403.2.3.1 & .2 - Stair and elevator shaft enclosures are to be impact-resistant.

IBC 403.2.4 - Bond resistance of spray-on fireproofing

IBC 403.3 - Sprinkler Requirements

IBC 403.4 - Fire Alarm System Requirements

- IBC 403.4.1 - Smoke Detection
- IBC 403.4.2 - Fire Alarm System
- IBC 403.4.3 - Standpipe
- IBC 403.4.4 - Emergency Voice/Alarm Communication
- IBC 403.4.5 - Emergency Responder Radio Coverage
- IBC 403.4.6 - Fire Command
- IBC 403.4.7 - Smoke Removal
- IBC 403.4.8 - Standby Power
- IBC 403.4.9 - Emergency Power

IBC 403.5 - Means of Egress and Evacuation

- IBC 403.5.1 - Minimum separation of exit stairs = 30 FT.
- IBC 403.5.4 - Smokeproof enclosures at exit stairs
- IBC 403.5.5 - Luminous egress path markings

IBC 403.6 - Elevators must comply with Chapter 30 and 403.6.1 and 403.6.2.

IBC 202 - High-rise building is a building with an occupied floor more than 75 FT above lowest level of Fire Department access.

- See Code Commentary Page 2-57

IBC 1014.3 - Common Path of Egress Travel

- IBC Table 1014.3 - B Occupancy: 100 FT, with sprinklers

IBC Section 1016 - Exit Access Travel Distance

- IBC 1016.2 - Travel distance shall not exceed Table 1016.2: Occupancy B = 300 FT with sprinklers

IBC Table 1018.1 Fire rating for corridors = 0-hour with sprinklers

IBC 1018.2 - Minimum corridor width = 44"

IBC Table 1018.2 - 72"-wide corridors required where serving gurney traffic

IBC 1021 - At least 2 exits required for 50-300 occupants.

IBC 1022.2 - Enclosure of exit stairs must have a fire resistance rating of at least 2 hours, when connecting 4 or more stories.

IBC 1027 - Exits shall discharge directly to the exterior of the building, at grade.

- Exceptions, with conditions.

Utah Administrative Code - R432-4-8: General Construction

R432-4-8 - Standards Compliance

- (1) (b) (ii): NFPA Life Safety Code Chapter 20 - New Ambulatory Health Care Occupancies
- (2) (b): IBC
- (2) (c): IMC
- (2) (d): IPC
- (2) (e): IFC
- (2) (j): NFPA 99, Standards for Health Care Facilities
- (2) (k): NFPA 110, Emergency and Standby Power Systems

R432-4-12 - Mixed Occupancies

- (1) Health care occupancies must be separated from non-health care occupancies in accordance with local jurisdiction and NFPA 101.
- (2) If separation is not practical, most restrictive occupancy requirements must apply to entire building.

R432-4-13 - All treatment and diagnostic areas must comply with R432-4 if:

- (1) Used by one or more patients incapable of taking independent life-saving action in an emergency.

R432-4-21 (1) - At-grade entrance; (2) Lobbies of multi-occupancy buildings

R432-4-23 - General Construction

- (1) Guidelines Parts 1 & 6
- (7) Grab bars in toilet rooms
- (15) Elevators 5'-8" wide x 8'-5" deep, with 3'-8" doors - for patient transport.
- (16b) Supply and return-air duct systems.

R-432-3-24 - General Construction - Patient Service Facilities

- (3) Freestanding satellites and in-house outpatient programs shall comply with Guidelines 3.2., 3.2, 3.3, 3.7 & 3.9.

HELIPAD. A structural surface that is used for the landing, taking off, taxiing and parking of helicopters.

❖ This definition provides a specific term that refers to the portion of a structure that is subject to the helicopter live loads in Section 1607.8.

HELIPORT. An area of land or water or a structural surface that is used, or intended for the use, for the landing and taking off of helicopters, and any appurtenant areas that are used, or intended for use, for heliport buildings or other heliport facilities.

❖ A heliport includes not only the immediate landing and take-off pad, but also all other adjacent service areas. The fueling, maintenance, repairs or storage of helicopters may be done within or outside of a building or structure. These outside areas or enclosed spaces are considered as part of the heliport.

HELISTOP. The same as "heliport," except that no fueling, defueling, maintenance, repairs or storage of helicopters is permitted.

❖ A helistop, by definition, is limited only to the immediate landing and take-off pad. Examples of helistops would be the pad located on top of a hospital for the unloading of emergency room patients, a pad for discharging commuters outside of an office building or the pad used to load and unload tourists at a sight-seeing attraction.

HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL). Panels consisting of layers of cellulose fibrous material impregnated with thermosetting resins and bonded together by a high-pressure process to form a homogeneous nonporous core suitable for exterior use.

❖ HPL is an exterior finish material. While in common use in Europe, HPL is finding expanded use elsewhere. The definition is based on the International

Standard EN 428. Section 1409 specifies the requirements and uses for HPL.

HIGH-PRESSURE DECORATIVE EXTERIOR-GRADE COMPACT LAMINATE (HPL) SYSTEM. An exterior wall covering fabricated using HPL in a specific assembly including joints, seams, attachments, substrate, framing and other details as appropriate to a particular design.

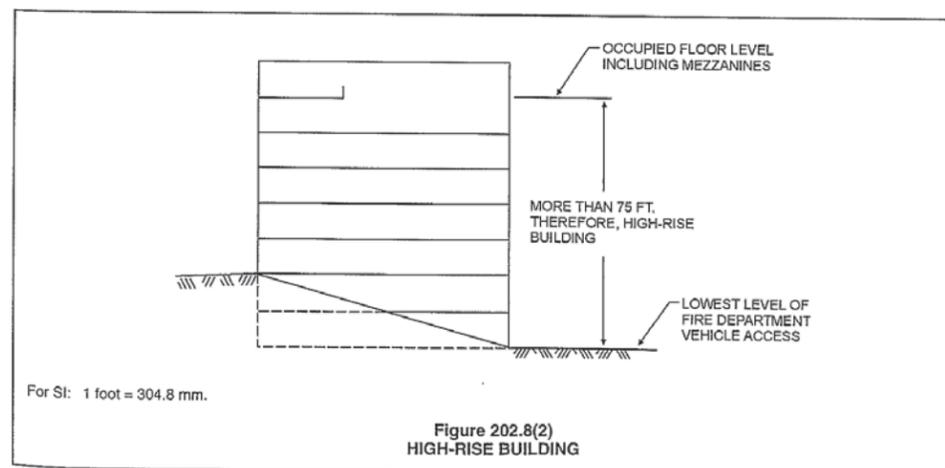
❖ HPL systems are intended for exterior application for buildings. The definition is based on the International Standard EN 428. Section 1409 specifies the requirements and uses for HPL systems.

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

❖ Determining what qualifies as a high-rise building is a fairly unique measurement of height and is not based on the definition of "Building height." The critical measurement is from the lowest ground location where a fire department will be able to set its fire-fighting equipment to a floor level of occupied floors (including any occupied roofs) as shown in Figure 202.8(2). It is not a measurement from grade plane to top of the building. The basis of the measurement is analyzing the capability of fighting a fire and rescuing occupants from the outside the building. Once past a height of 75 feet (22 860 mm) above ground level, ground-based fire fighting will not be sufficient. High-rise buildings must comply with the requirements of Section 403.

[F] **HIGHLY TOXIC.** A material which produces a lethal dose or lethal concentration that falls within any of the following categories:

1. A chemical that has a median lethal dose (LD₅₀) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.



May 5, 2014

UNIVERSITY OF UTAH HEALTH CARE

AMBULATORY AND ADMINISTRATIVE BUILDING FEASIBILITY STUDY

Mechanical Systems

High Temperature Hot Water

A HTHW room or vault will be required to house the HTHW heat exchangers and building HW pumps. The room should be located on the lower level of the building and should be provided with an exterior exposure and an entrance door directly to the outside. The room shall be designed to the University of Utah Design Standards.

Two HTHW heat exchangers shall be provided to meet the heating requirements of the building. Each heat exchanger shall be designed for 100% of the building load.

Domestic Hot Water should be generated from the two main building HTHW heat exchangers.

Building HW pumps will be provided to distribute building hot water to the building for heating needs.

Room size should be as outlined in the mechanical room spreadsheet provided as part of this study.

Back Up Boiler

There is an existing boiler room located in the proposed location for the building expansion. This boiler plant serves as a code mandated back up heating source to the existing University of Utah Medical Center. It is essential that this plant remain operational throughout the construction of the new building.

In addition to maintaining the existing boiler plant the new building will also require back up boiler capacity to the HTHW heating plant that is the primary heating source.

The new boiler plant capacity should be combined with the existing boilers in order to take advantage of redundancy.

Since the building expansion is planned to be in the same location of the existing boiler plant, two options are being considered to meet the new requirements while maintaining the existing systems.

Room size should be as outlined in the mechanical room spreadsheet provided as part of this study. The room should be located on the ground or basement level of the building and should allow for good outside access to the room for equipment removal.

Option A - Leave existing plant in place.

In order to leave the existing back up boiler plant in place and still allow for construction of the new building expansion the new building will need to be constructed around the existing plant. The new building will need to accommodate the following:

- Exterior louvers that allow for ventilation air into the building.

Ductwork will need to be connected to these louvers and extended through the building to the outside.

- Exhaust fans located on the roof.

A new pathway must be provided for exhaust systems that should be extended from the existing plant to through the new building to the new roof.

- Boiler flues and vent piping.

Shaft space will be required to extend any boiler flues and vent piping that currently extend through the existing roof from the existing plant to the roof of the new building.

- Utility piping.

All utility piping that extends from the boiler plant to the existing hospital must be allowed to be extended from the existing plant through the new building into the existing hospital.

- Access to equipment for service and future replacement.

It is important to be able to maintain and replace the existing equipment in the existing plant. Adequate access must be provided through the new building to service and replace the equipment.

Option B – Relocate the existing boiler plant

In order to relocate the existing boiler plant and allow for the construction of the new expansion the following must be provided:

- Construct new building where boilers will be located.

Construction must take place on the portion of the building where the new boiler plant is to be located. This construction must take place without interruption of the existing plant. The existing plant must remain operational throughout the construction process.

- Install new and or relocated equipment into the new boiler plant.

The new boiler plant must be completed and operational before the existing plant is removed from service.

- Demolish and salvage existing equipment.

In order to save costs, it may be possible to relocate some of the existing equipment into the new facility. Any relocation of existing equipment must not hinder the capability of the systems from providing the back up boiler capacity required for the existing hospital.

Chilled Water

A chilled water pump room will be required to house the chilled water pumps and heat exchangers. Chilled water will be provided from the East Campus Chilled Water Plant. The chilled water from the plant will be extended to the plate and frame heat exchangers to de-couple the chilled water system of the new building from the upper campus central chilled water system.

Chilled water pumps will distribute the chilled water to the air handling systems to meet the cooling requirements of the building.

Room size should be as outlined in the mechanical room spreadsheet provided as part of this study. The chilled water pump room should be located in the ground or basement level of the expansion.

Air Handling Systems

The air handling systems for the expansion should primarily be VAV Reheat air handling systems. Consideration during programming and design should be given to utilizing a three stage evaporative cooling system where appropriate. Other systems may be considered at the programming stage, but for the purposes of this study it has been assumed that VAV Reheat will be used to determine the air handling room sizes and shaft sizes required.

Option #1-Three Story Option

The air handling systems will be located on the roof in a penthouse. The penthouse should be located and constructed to allow for the future vertical expansion of four additional floors. Outside and relief air should be located with sidewall louvers to allow for the vertical expansion above the existing penthouse.

Shafts will be required to allow for vertical ductwork and piping systems from the penthouse to the floors below.

Room and shaft sizes should be as outlined in the mechanical room spreadsheet provided as part of this study.

Option #2 – Five Story Option

The air handling systems will be separated with levels A and 1 served from a basement air handling room and levels 2, 3, & 4 served from a penthouse air handling room. Providing air handling systems that serve from above and below will reduce the shaft sizes required vertically through the building.

Shafts will be required to allow for vertical ductwork and piping systems from the penthouse to the floors below.

Room and shaft sizes should be as outlined in the mechanical room spreadsheet provided as part of this study.

Option #3 – Seven Story Option

The air handling systems will be separated with levels A, 1, & 2 served from a basement air handling room and levels 3, 4, 5, & 6 served from a penthouse air handling room. Providing air handling systems that serve from above and below will reduce the shaft sizes required vertically through the building.

Shafts will be required to allow for vertical ductwork and piping systems from the penthouse to the floors below.

Room and shaft sizes should be as outlined in the mechanical room spreadsheet provided as part of this study.

Option #4 – Seven Story Option with Floor by Floor Air handling systems

The air handling systems will be located on each floor. Fan room space will be required on each floor. Shaft space vertically is reduced. There will be a need for louvers on the exterior of each floor to each fan room for both outside and relief air.

Shafts will still be required for vertical transportation of mechanical and plumbing utilities.

Room and shaft sizes should be as outlined in the mechanical room spreadsheet provided as part of this study.

Site Utilities / Existing Site Conditions

The area directly west of Building 525 contains a significant number of underground utilities and below grade structures. The placement of the Backup Boiler Plant required considerable coordination and field verification of existing utilities in order to find a location that did not conflict with active utilities or structures. It should be noted that the Backup Boiler Plant is connected via tunnels to Building 525 and Parking Structure 50. It should also be noted that there is a buried tower crane foundation in the proximity of these tunnels.

The proposed building expansion will face the same complex situation. Regardless of the building proposal that is selected, it is recommended that utilities that transit the site be consolidated. Dependent upon the overall footprint of the structure, these utilities can be grouped together either in the ground or in tunnels. The attached drawing shows possible grouping and routing if the utilities. Discussion of individual utilities is listed below.

High Temperature Water

Currently HTW is routed in a tunnel on the south side of Parking Structure 50. This line will extend west in the existing tunnel, then south in the new utility corridor/tunnel and connect to the source on the south side of the proposed building. Connection will also be made to the HTW serving Moran II Building. This system must remain in service for downstream users. Backup heat exists in Moran II for the vivarium. Buildings 522, 525 and 529 receive backup heat from the Backup Boiler Plant. This plant must remain in service while the HTW is relocated. Clinical Neuroscience is also affected by this relocation. An alternate heat source has been designed but not installed. Other outages have required the installation of a temporary boiler.

Sanitary Sewer

Currently Sanitary Sewer is routed in a tunnel on the south side of Parking Structure 50. This line will be routed into the new utility corridor/tunnel and connect to the existing outfall that extends west. This line would also receive the Level B effluent of Building 525. This utility must remain in service for upstream contributors. This sewer line may be bypassed temporarily during the main relocation.

The grease laden waste line from Building 522 will also be redirected west in the existing Parking Structure 50 tunnel. It will be extended west to the lower parking lot at the base of the hill. The grease interceptor will be placed at the toe of the hill. This will allow servicing of the interceptor.

Potable Water

Currently Potable water is routed in a tunnel on the south of Parking Structure 50. This will be routed

building. Connection will also be made to the Potable water line serving Primary Children's Medical Center on the west. Alternate sources of potable water exist. This utility may be out of service during the construction of the proposed building.

Underground Fuel Storage Tank

This system consists of a double wall, fiberglass tank. The size is 20,000 gallons. The fuel is a backup to natural gas serving the Backup Boiler Plant. This system can reasonably be relocated outside the footprint of the proposed building. The utility may be out of service with provision for supporting the boiler operation in the event of loss of natural gas.

Foundation Drainage

The existing foundation drainage from Building 525 will be routed around the proposed building and reconnect to the outfall on the west.

Storm Drainage

This system flows through the proposed building site from south to north. The piping may be interrupted during construction. Permanent routing will be determined by the structure design of the proposed building.

High Pressure Steam and Condensate

These systems are currently in a tunnel from the Backup Boiler Plant to Building 525 and the tunnel located on the south side of Parking Structure 50. Relocation of these lines is dependent on the final location of the backup boiler system.

Natural Gas

This system is routed to the Backup Boiler Plant from Building 526, through Building 525. Relocation of this line is dependent on the final location of the backup boiler system.

Electrical

Buried concrete encased conduits, vaults and transformers are located within the proposed building footprint. These may be relocated into the utility corridor/tunnel system. It is recommended that this be a separate tunnel from the "wet" utilities.

Communication

Buried concrete encased conduits, and vaults are located within the proposed building footprint. These may be relocated into the utility corridor/tunnel system. It is recommended that this be a tunnel separated from the "wet" utility tunnel.

Other Existing Conditions

The existing Pharmacy on level A is currently short on cooling capacity. As part of the building expansion the mechanical system design should incorporate the temperature control needs of the pharmacy. Currently there is an existing condenser farm serving fan coils serving the Pharmacy on Level A. The condensing units are located just west of Building 525. If the fan coils are to remain in service the condensing units will need to be relocated and the refrigerant piping will need to be extended and line size replaced based on the additional distances.

At the northwest corner of level A there is an existing exhaust/relief air louver. This louver will need to be relocated to accommodate the expansion.

Just south of the condensing unit farm there is a fresh air intake that would also need to be relocated.

Project: U of U AAB
 Subject: Mechanical Room & Shaft Requirements
 Date: 5-May-14

Option # 1 Three Levels (with future four levels above)

Served By Mechanical Penthouse						
Building Area	Sq. Ft.	CFM/Sq Ft	CFM	Shaft (Sq Ft)	Penthouse (Sq Ft)	
Level A	20,800	1.2	24,960	50		
Level 1	20,800	1.2	24,960	200		
Level 2	25,100	1.2	30,120	286		
Level 3 Mechanical Penthouse					5,336	
Total	66,700	1.5	100,050	536	5,336	

Option #2 Five Levels

Basement Mechanical Room						
Building Area	Sq. Ft.	CFM/Sq Ft	CFM	Shaft (Sq Ft)	Penthouse (Sq Ft)	
Level A	20,800	1.2	24,960	143		
Level 1	20,800	1.2	24,960	71		
Lower Floor Total	41,600	1.2	49,920	214		
Basement Fan Room	41,600	1.2	49,920	214	3,328	
Served By Mechanical Penthouse						
Building Area	Sq. Ft.	CFM/Sq Ft	CFM	Shaft (Sq Ft)	Penthouse (Sq Ft)	
Level 2	25,100	1.2	30,120	50		
Level 3	32,000	1.2	38,400	196		
Level 4	32,000	1.2	38,400	305		
Upper Floor Total	89,100	1.2	106,920	551		
Level 5 Penthouse					7,128	
Total	89,100	1.2	106,920	551	7,128	

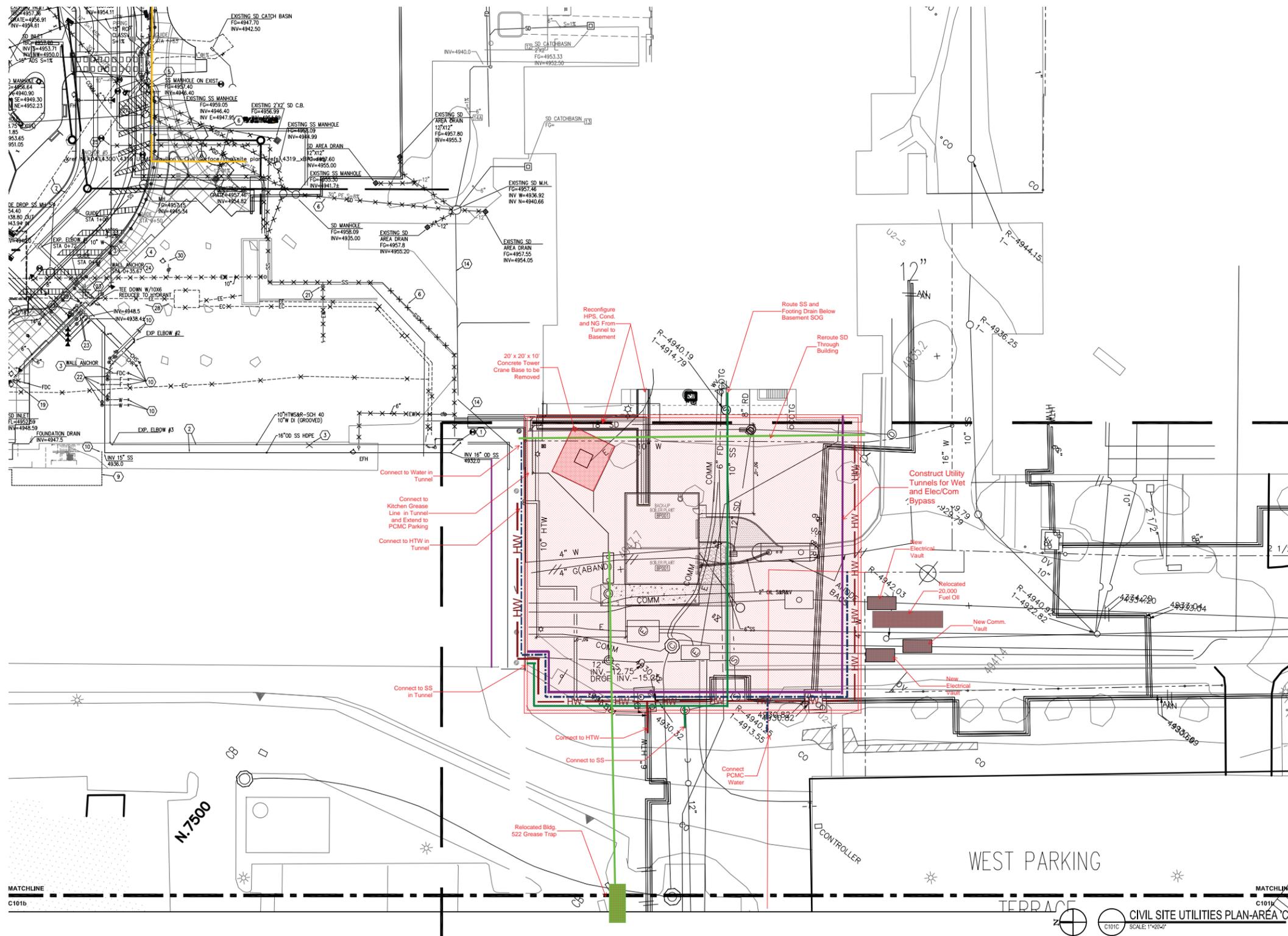
Option #3 Seven Levels

Basement Mechanical Room						
Building Area	Sq. Ft.	CFM/Sq Ft	CFM	Shaft (Sq Ft)	Penthouse (Sq Ft)	
Level A	20,800	1.2	24,960	229		
Level 1	20,800	1.2	24,960	157		
Level 2	25,100	1.2	30,120	86		
Lower Levels Total	66,700	1.2	80,040	472		
Basement Fan Room	66,700	1.2	80,040	472	5,336	
Served By Mechanical Penthouse						
Building Area	Sq. Ft.	CFM/Sq Ft	CFM	Shaft (Sq Ft)	Penthouse (Sq Ft)	
Level 3	32,000	1.5	48,000	50		
Level 4	32,000	1.2	38,400	247		
Level 5	32,000	1.2	38,400	357		
Level 6	32,000	1.2	38,400	466		
Upper Floor Total	128,000	1.2	163,200	1,120		
Level 7 Penthouse					10,240	
Total	128,000	1.2	163,200	653	10,240	

Option #4 Seven Levels (floor by floor fan rooms)

Building Area	Sq Ft	CFM/Sq Ft	CFM	Shaft (Sq Ft)	Fan Room (Sq Ft)
Level A	20,800	1.2	24,960	50	1,664
Level 1	20,800	1.2	24,960	50	1,664
Level 2	25,100	1.2	30,120	50	2,008
Level 3	32,000	1.5	48,000	50	2,560
Level 4	32,000	1.2	38,400	50	2,560
Level 5	32,000	1.2	38,400	50	2,560
Level 6	32,000	1.2	38,400	50	2,560
Total	194,700		218,280	200	

99737381.xls



**REPORT
PRELIMINARY GEOTECHNICAL STUDY
PROPOSED STRUCTURE
APPROXIMATELY 70 NORTH 1900 EAST
SALT LAKE CITY, UTAH**

Submitted To:

MHTN Architects, Inc.
420 East South Temple, Suite 100
Salt Lake City, Utah 84111

Submitted By:

GSH Geotechnical, Inc.
473 West 4800 South
Salt Lake City, Utah 84123

May 16, 2014
Job No. 0149-020-14

Mr. David Daining, AIA, NCARB, LEED AP
MHTN Architects, Inc.
420 East South Temple, Suite 100
Salt Lake City, Utah 84111

Mr. Daining:

Re: Report
Preliminary Geotechnical Study
Proposed Structure
Approximately 70 North 1900 East
Salt Lake City, Utah
(40.7709,-111.8370)

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our preliminary geotechnical study performed for the future structure which will be constructed at approximately 70 North 1900 East in Salt Lake City, Utah. The general location of the site with respect to major topographic features and existing facilities, as of 1998, is presented on Figure 1, Vicinity Map. A detailed layout of the site showing existing facilities is presented on Figure 2, Site Plan. The locations of the borings drilled in conjunction with this study are also presented on Figure 2.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of this preliminary study were planned in discussions between Mr. David Daining of MHTN Architects, Inc., and Messrs. Alan Spilker and Mike Huber of GSH Geotechnical, Inc. (GSH).

In general, the objectives of this preliminary study were to:

1. Preliminarily define and evaluate the subsurface soil and groundwater conditions at the site.

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2. Provide appropriate preliminary foundation, earthwork, and pavement recommendations and geoseismic information to be utilized in the design and construction of the proposed future structure.

In accomplishing these objectives, our scope has included the following:

1. A field program consisting of the drilling, logging, and sampling of 2 borings to depths of 51 and 71 feet.
2. A laboratory testing program.
3. An office program consisting of the correlation of available data, engineering analyses, and the preparation of this summary report.

1.3 AUTHORIZATION

Authorization was provided by the client based on our Professional Services Agreement 14-0460.rev1, dated April 30, 2014.

1.4 PROFESSIONAL STATEMENTS

Supporting data upon which our recommendations are based are presented in subsequent sections of this report. Recommendations presented herein are governed by the physical properties of the soils encountered in the exploration borings, projected groundwater conditions, and the layout and design data discussed in Section 2, Proposed Construction, of this report. If subsurface conditions other than those described in this report are encountered and/or if design and layout changes are implemented, GSH must be informed so that our recommendations can be reviewed and amended, if necessary.

Our professional services have been performed, our findings developed, and our recommendations prepared in accordance with generally accepted engineering principles and practices in this area at this time.

2. PROPOSED CONSTRUCTION

The future construction at the site is in the preliminary design stage. It is anticipated that the proposed structure may extend as much as 40 to 50 feet below grade to meet with the grade at the base of the slope to the immediate southwest of the site.

Once design concepts are available, GSH will need to perform additional subsurface investigations, laboratory testing, and engineering analysis prior to completing a final report for the site.

Structural loads are anticipated to be transmitted down through bearing walls and columns to supporting foundations. It is anticipated maximum column loads could be up to 500 kips and

wall loads up to 9 kips per lineal foot, respectively. These loads are preliminary and must be re-evaluated once final loads become available. At-grade floor slab loads are anticipated to be relatively light and are not anticipated to exceed an average uniform loading of 150 pounds per square foot.

Due to the slope of the site and building configurations, a significant amount of earthwork will be required to obtain anticipated building pad grades. At this time, we would project that the maximum cuts and/or fills associated with the project could be as much as 20 to 50 feet.

3. SITE INVESTIGATIONS

3.1 FIELD PROGRAM

In order to define and preliminarily evaluate the subsurface soil and groundwater conditions at the site, 2 borings were explored to depths of 51 and 71 feet below existing grade. The borings were drilled using a truck-mounted drill rig equipped with hollow-stem augers with mud rotary capabilities. The deeper portions of the explorations were completed with mud rotary drilling. Locations of the borings are presented on Figure 2.

The field portion of our study was under the direct control and continual supervision of experienced members of our geotechnical staff. During the course of the drilling operations, a continuous log of the subsurface conditions encountered was maintained. In addition, samples of the typical soils encountered were obtained for subsequent laboratory testing and examination. The soils were classified in the field based upon visual and textural examination. These classifications have been supplemented by subsequent inspection and testing in our laboratory. Detailed graphical representation of the subsurface conditions encountered is presented on Figures 3A and 3B, Log of Borings. Soils were classified in accordance with the nomenclature described on Figure 4, Key to Boring Log (USCS).

A 3.25-inch outside diameter, 2.42-inch inside diameter drive sampler (Dames & Moore) was utilized in the majority of the subsurface sampling at the site. Additionally, a 2.0-inch outside diameter, 1.38-inch inside diameter drive sampler (SPT) was utilized at select locations and depths. The blow counts recorded on the boring logs were those required to drive the samplers 12 inches with a 140-pound hammer dropping 30 inches.

Following completion of drilling operations, one and one-quarter-inch diameter slotted PVC pipe was installed in both borings in order to provide a means of monitoring groundwater fluctuations.

3.2 LABORATORY TESTING

3.2.1 General



To provide preliminary data for our analyses, a laboratory testing program has been completed. The program includes moisture, density, gradation, consolidation, and chemical tests. Descriptions of the tests are presented in the following sections.

3.2.2 Moisture and Density Tests

To aid in classifying the soils and to help correlate other test data, moisture and density tests were performed on selected samples. The results of these tests are presented on the boring logs, Figures 3A and 3B.

3.2.3 Gradation Tests

To aid in classifying the soils and to help correlate other test data, gradation tests were performed on selected samples. The results of these tests are presented on the boring logs, Figures 3A and 3B.

3.2.4 Consolidation Tests

To provide data necessary for a settlement analyses, a consolidation test was performed on each of 2 representative samples of the natural clay soils encountered. The results indicate that the fine-grained soils are moderately to highly over-consolidated and will exhibit moderate strength and compressibility characteristics when loaded below the over-consolidation pressure.

3.2.5 Chemical Tests

To determine if the site soils will react detrimentally with concrete, chemical tests were performed on a representative sample of the soils encountered at the site. The results of the chemical tests are tabulated below:

Boring No.	Depth (feet)	Soil Classification	pH	Total Water Soluble Sulfate (mg/kg-dry)
B-2	1.0	CL	8.7	64.0

4. SITE CONDITIONS

4.1 SURFACE

The site of the proposed future structure is located in the area between the University of Utah Hospital to the northeast, the University Hospital Parking Terrace and connector to Primary Children’s Medical Center to the northwest, the School of Medicine to the southeast, and the Medical Center Parking Terrace to the southwest. The area of the site is currently occupied by the West Pavilion Generating Plant, various trailer structures, and landscaped areas. The West

Pavilion Generating Plant is a one-extended level structure of concrete block construction. The Boiler Plant and the trailer structures are established on concrete foundations.

The site is relatively flat around the trailers and the West Pavilion Generating Plant structure. The sites to the northeast, northwest, and southeast are at similar elevations to the area around the Boiler Plant. The area to the immediate southwest proceeds down a significant slope. This slope extends approximately 45 to 50 feet below the area around the West Pavilion Generating Plant and slopes at approximately two horizontal to one vertical (2H:1V). Below the toe of this slope is a parking lot between Primary Children’s Medical Center and the Medical Center Parking Terrace.

4.2 SUBSURFACE SOIL AND GROUNDWATER

Subsurface conditions encountered in the exploration borings were found to be relatively consistent. At the surface are non-engineered fills which extend to depths of approximately 4 feet in both borings. The fills are comprised primarily of silty clay with varying amounts of sand and gravel. The fills vary in density and are moist, brown, and will exhibit variable and, in most cases, poor engineered characteristics.

Underneath the fills are gravels that extend to depths of 9.5 feet in B-1 and 12 feet in B-2.

Below the gravels are sandy clays that extend to depths of 18 feet in B-1 and 30 feet in B-2.

Underlying these clays to the extent of the borings, 51 and 71 feet, are sands and gravels with a single clay layer in B-2 from 52 to 56 feet.

The native clay soils are generally very stiff, slightly moist to moist, brown, and are anticipated to exhibit moderate strength and compressibility characteristics under the anticipated loads. The sand and gravel soils are generally dense to very dense, moist, brown, and are anticipated to exhibit relatively high strength and low compressibility characteristics under the anticipated loads. The sands and gravels grade saturated below approximately 58 feet. Occasional cobbles and boulders were encountered throughout the sands and gravels with the frequency of cobbles increasing below depths of 50 feet.

Groundwater was encountered in B-2 at 57.4 feet below grade. We anticipate this is “perched” groundwater and the true groundwater surface is at significant depth. Perched groundwater is typical of this area.

The lines designating the interface between soil types on the boring logs generally represent approximate boundaries. In-situ, the transition between soil types may be gradual.



5. DISCUSSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

As previously mentioned in this report, the future construction at the site is in the preliminary stages. Once design concepts are available, GSH will need to perform additional subsurface investigations, laboratory testing, and engineering analysis prior to completing a final report for the site.

The most significant geotechnical aspects of the site are: 1) the surficial non-engineered fills that extend to depths of approximately 4 feet at the boring locations and likely deeper in other areas of the site; and 2) the significant layers of clay soils encountered within each of the borings.

The non-engineered fills are not suitable for the support of foundations, floor slabs, or structural site grading fills and must be completely removed in these areas. Structures are anticipated to, in most cases, fully penetrate the non-engineered fills.

Significant layers of silty clay soils were encountered at various locations and depths in the boring locations. These natural silty clay layers are variable in depth and thickness and may be encountered at footing depths within portions of the future structure. Due to the high anticipated footing loads and the potential for differential settlement from soil/fill variation, it is anticipated that a minimum of 5 feet of granular soils and/or structural fills be verified/placed under footings. Therefore, where clays are encountered at footing grade, they must be replaced by a minimum of 5 feet of granular structural fill. For lighter loaded footings, the replacement fill may be reduced and, in some cases, eliminated and the footings placed directly on the native clays.

True groundwater was not encountered to the depths penetrated. "Perched" groundwater was encountered at a depth of 57.4 feet in Boring B-2.

In the following sections, preliminary discussions pertaining to earthwork, foundations, at-grade slabs, lateral resistance and pressure, and initial geoseismic parameters are provided.

5.2 EARTHWORK

5.2.1 Site Preparation

Prior to initiation of any major construction activity, all utilities passing through or immediately adjacent to the construction site must be identified, then either abandoned or relocated if required. Subsequently, earthwork may be initiated. Earthwork will initially consist of the removal of all surface vegetation, topsoil, and other deleterious materials from an area extending out at least 3 feet from the perimeter of the proposed structures. Subsequent to these operations, mass excavations for the removal of non-engineered fills and/or to obtain below-grade levels can be initiated. Excavation through the clayey soils will require some effort due to the stiffness of

the soils. Excavation through the dense and sometimes slightly to moderately cemented granular soils will be more difficult. However, our experience indicates that these excavations can be accomplished with standard heavy duty construction equipment.

Subsequent to the above operations and prior to the placement of footings, structural site grading fill, or floor slabs, the exposed natural subgrade must be proofrolled by passing moderate-weight rubber tire-mounted construction equipment over the surface at least twice. If any loose, soft, or disturbed zones are encountered, they must be completely removed in footing and floor slab areas and replaced with granular structural fill. If additional removal depth required is greater than 2 feet, GSH must be notified to provide further recommendations. In pavement areas, unsuitable soils encountered during recompaction and proofrolling must be removed to a maximum depth of 2 feet and replaced with compacted granular structural fill.

5.2.2 Excavations

Temporary excavations not exceeding 4 feet in depth through the granular or cohesive soils may be constructed with near-vertical sideslopes.

Deeper excavations up to approximately 8 feet in both the granular and cohesive soils can be constructed with sideslopes no steeper than one-half horizontal to one vertical (0.5H:1.0V). Deeper excavations, up to approximately 20 feet, should be constructed with sideslopes no steeper than three-quarters horizontal to one vertical (0.75H:1.0V). If zones of loose granular soils or "perched" groundwater are encountered, the slopes must be flattened.

It is our understanding that site development may include permanent vertical walls that will potentially extend up to 50 feet below final surrounding grades. GSH anticipates that these walls will be designed by the shoring contractor using data provided within this and the future final geotechnical report.

All excavations must be inspected periodically by qualified personnel. If any signs of instability are noted, immediate remedial action must be initiated.

5.2.3 Structural Fill

Structural fill is defined as all fill which will ultimately be subjected to structural loadings, such as imposed by footings, floor slabs, pavements, etc. Structural fill will be required as backfill over foundations and utilities, as site grading fill, and as replacement fill below footings. All structural fill must be free of sod, rubbish, topsoil, frozen soil, and other deleterious materials.

Structural site grading fill is defined as structural fill placed over relatively large open areas to raise the overall grade. For structural site grading fill, the maximum particle size shall not exceed 4 inches; although, occasional larger particles, not exceeding 8 inches in diameter, may be incorporated if placed randomly in a manner such that "honeycombing" does not occur and



the desired degree of compaction can be achieved. The maximum particle size within structural fill placed within confined areas shall be restricted to 2 inches.

The on-site silty clay soils may be utilized as structural site grading fill beneath pavements and outside flatwork. These materials, however, are not recommended beneath the proposed structures. The on-site granular soils can be utilized beneath pavements, outside flatwork, and buildings if they meet the requirements as stated above for structural fill.

The utilization of the clay soils as structural site grading fill may become very difficult, if not impossible, to properly compact during wet and cold periods of the year.

To stabilize soft subgrade conditions, a mixture of coarse gravels and cobbles and/or 1.5- to 2.0- inch gravel (stabilizing fill) should be utilized.

Non-structural site grading fill is defined as all fill material not designated as structural fill and may consist of any cohesive or granular soils not containing excessive amounts of degradable material.

5.2.4 Fill Placement and Compaction

Structural fill (other than stabilizing fill) shall be placed in lifts not exceeding 8 inches in loose thickness. Structural fills shall be compacted in accordance with the percent of the maximum dry density as determined by the AASHTO¹ T-180 (ASTM² D-1557) compaction criteria in accordance with the following table:

Location	Total Fill Thickness (feet)	Minimum Percentage of Maximum Dry Density
Beneath an area extending at least 5 feet beyond the perimeter of the building and flatwork	0 to 10	95
Beneath an area extending at least 5 feet beyond the perimeter of the building and flatwork	10 to 15	97
Beneath an area extending at least 5 feet beyond the perimeter of the building and flatwork	15 to 20	99
Outside area defined above	0 to 5	92

¹ American Association of State Highway and Transportation Officials
² American Society for Testing and Materials

Location	Total Fill Thickness (feet)	Minimum Percentage of Maximum Dry Density
Outside area defined above	5 to 10	95
Aggregate Road Base	0 to 5	96

Structural fills greater than 20 feet thick will require specific instructions based on its location and the material utilized. It is anticipated that these details will be available for the final report. Coarse gravel and cobble mixtures (stabilizing fill), if utilized, should be end-dumped, spread to a maximum loose lift thickness of 15 inches, and compacted by dropping a backhoe bucket onto the surface continuously at least twice. As an alternative, the stabilizing fill may be compacted by passing moderately heavy construction equipment or large self-propelled compaction equipment at least twice. Subsequent fill material placed over the coarse gravels and cobbles should be adequately compacted so that the “fines” are “worked into” the voids in the underlying coarser gravels and cobbles.

Subsequent to stripping and prior to the placement of structural site grading fill, the subgrade shall be prepared as discussed in Section 5.2.1, Site Preparation, of this report. In confined areas, subgrade preparation should consist of the removal of all loose or disturbed soils.

Non-structural fill may be placed in lifts not exceeding 12 inches in loose thickness and compacted by passing construction, spreading, or hauling equipment over the surface at least twice.

5.2.5 Utility Trenches

All utility trench backfill material below structurally loaded facilities (flatwork, floor slabs, roads, etc.) shall be placed at the same density requirements established for structural fill. If the surface of the backfill becomes disturbed during the course of construction, the backfill shall be proofrolled and/or properly compacted prior to the construction of any exterior flatwork over a backfilled trench. Proofrolling shall be performed by passing moderately loaded rubber tire-mounted construction equipment uniformly over the surface at least twice. If excessively loose or soft areas are encountered during proofrolling, they shall be removed to a maximum depth of 2 feet below design finish grade and replaced with structural fill.

Most utility companies and City-County governments are now requiring that Type A-1a or A-1b (AASHTO Designation – basically granular soils with limited fines) soils be used as backfill over utilities.

Most utility companies and City-County governments are also requiring that in public roadways the backfill over major utilities be compacted over the full depth of fill to at least 96 percent of the maximum dry density as determined by the AASHTO T-180 (ASTM D-1557) method of



compaction. We recommend that as the major utilities continue onto the site that these compaction specifications are followed.

The clay soils are not recommended for utility trench backfill.

5.3 SPREAD AND CONTINUOUS WALL FOUNDATIONS

5.3.1 Design Data

The proposed structures can be supported upon conventional spread and continuous wall foundations established upon a minimum of 5 feet of native granular soils and/or structural fills extending to suitable native soils. Therefore, where clays are encountered at footing grade, they must be replaced by a minimum of 5 feet of granular structural fill. For lighter loaded footings replacement fill may be reduced and, in some cases eliminated, and the footings placed directly on the native clays. Further details of the lighter loaded footings are anticipated to occur in the final report once projected footing loads are available. Under no circumstances shall footings be established over non-engineered fills. For preliminary design, the following parameters are provided:

Minimum Recommended Depth of Embedment for Frost Protection	- 30 inches
Minimum Recommended Depth of Embedment for Non-frost Conditions	- 15 inches
Recommended Minimum Width for Continuous Wall Footings	- 18 inches
Minimum Recommended Width for Isolated Spread Footings	- 24 inches
Recommended Net Bearing Pressure for Real Load Conditions	- 3,000 pounds per square foot*
Bearing Pressure Increase for Seismic Loading	- 50 percent

* For footings of widths greater than 4 feet where dense granular soils are verified to be at least 5 feet thick below the base of the footings, the bearing pressure can be increased to approximately 5,000 pounds per square foot. Additional options may be available for higher bearing pressures and will need to be evaluated on a case-by-case basis.



The term “net bearing pressure” refers to the pressure imposed by the portion of the structure located above lowest adjacent final grade. Therefore, the weight of the footing and backfill to lowest adjacent final grade need not be considered. Real loads are defined as the total of all dead plus frequently applied live loads. Total load includes all dead and live loads, including seismic and wind.

5.3.2 Installation

Under no circumstances shall the footings be established upon non-engineered fills, loose or disturbed soils, topsoil, sod, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water. If unsuitable soils are encountered, they must be completely removed and replaced with compacted structural fill.

The width of structural replacement fill below footings should be equal to the width of the footing plus one foot for each foot of fill thickness.

5.3.3 Settlements

Settlements of foundations designed and installed in accordance with above recommendations and supporting maximum projected structural loads are anticipated to be less than one inch. Settlements are expected to occur rapidly with approximately 50 to 60 percent of the settlements occurring during construction.

5.4 FLOOR SLABS

Floor slabs may be established upon suitable natural soils and/or upon structural fill extending to suitable natural soils. Under no circumstances shall floor slabs be established over non-engineered fills, loose or disturbed soils, sod, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water. In order to facilitate construction and curing of the concrete, it is recommended that floor slabs be directly underlain by a minimum 4 inches of “free-draining” fill, such as “pea” gravel or three-quarters- to one-inch minus clean gap-graded gravel over proofrolled subgrade.

Settlement of lightly loaded floor slabs (average uniform pressure of 150 pounds per square foot or less) is anticipated to be less than one-quarter of an inch.

5.5 SUBDRAINS

The area of the site is notorious for laterally and vertically variable “perched” groundwater conditions. Therefore, around the outside perimeter of all portions of the structures, which will extend below grade, a perimeter foundation/chimney subdrain will be required. The foundation subdrain would consist of a 4-inch diameter slotted or perforated pipe with its invert at least 12 inches below the top of the lowest adjacent slab. Extending up from the perimeter drain to within 2 feet of final grade should be a chimney drain. In this case, we recommend the chimney drain consist of a minimum 3-foot width, perpendicular to the face of the wall, of “free-draining”



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granular materials. These gravels will act as a chimney drain and will also reduce lateral pressures imposed upon the subgrade walls

5.6 LATERAL RESISTANCE

Lateral loads imposed upon foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footings and the supporting soils. In determining frictional resistance, a coefficient of 0.45 should be utilized. Passive resistance provided by properly placed and compacted granular structural fill above the water table may be considered equivalent to a fluid with a density of 300 pounds per cubic foot. Below the water table, this granular soil should be considered equivalent to a fluid with a density of 150 pounds per cubic foot.

A combination of passive earth resistance and friction may be utilized provided that the friction component of the total is divided by 1.5.

5.7 LATERAL PRESSURES

The lateral pressure parameters, as presented within this section, project that the backfill will consist of a 3-foot zone of crushed gravel adjacent to the subgrade wall and “free-draining” soils beyond. The lateral pressures imposed upon subgrade facilities will, therefore, be basically dependent upon the relative rigidity and movement of the backfilled structure. For the subgrade walls as proposed, granular backfill may be considered equivalent to a fluid with a density of 45 pounds per cubic foot in computing lateral pressures.

For seismic loading, an average uniform pressure of 65, 130, 195, 260, 390, 520, and 650 pounds per square foot should be used for 5-, 10-, 15-, 20-, 30-, 40-, and 50-foot high subgrade walls, respectively. Detail distribution pattern can be provided upon request.

5.8 PAVEMENTS

The existing natural soils will exhibit poor pavement support characteristics when wet. All pavement areas must be prepared as previously discussed (see Section 5.2.1, Site Preparation). With the subgrade soils and the projected traffic, the pavement sections on the following pages are recommended.



Parking Areas

(Light Volume of Automobiles and Light Trucks,
 Occasional Medium-Weight Trucks,
 No Heavy-Weight Trucks)
 [Less than 1 equivalent 18-kip axle load per day]

Flexible:

2.5 inches	Asphalt concrete
7.0 inches	Aggregate base course
Over	Properly prepared natural subgrade soils, and/or structural site grading fill extending to suitable natural subgrade soils

Rigid:

5.0 inches	Portland cement concrete (non-reinforced)
4.0 inches	Aggregate base course
Over	Properly prepared natural subgrade soils and/or structural site grading fill extending to suitable natural subgrade soils

Parking Lot Primary Drive Lanes

(Moderate Volume of Automobiles and Light Trucks,
 Light Volume of Medium-Weight Trucks,
 and Occasional Heavy-Weight Trucks)
 [15 equivalent 18-kip axle loads per day]

Flexible:

3.0 inches	Asphalt concrete
8.0 inches	Aggregate base course
Over	Properly prepared natural subgrade soils, and/or structural site grading fill extending to suitable natural subgrade soils

Rigid:

5.5 inches	Portland cement concrete (non-reinforced)
5.0 inches	Aggregate base course
Over	Properly prepared natural subgrade soils and/or structural site grading fill extending to suitable natural subgrade soils

For dumpster pads, we recommend a pavement section consisting of 6.5 inches of Portland cement concrete, 4.0 inches of aggregate base course, over properly prepared suitable natural subgrade or site grading structural fills extending to suitable natural soils.

These above rigid pavement sections are for non-reinforced Portland cement concrete. Concrete should be designed in accordance with the American Concrete Institute (ACI) and joint details should conform to the Portland Cement Association (PCA) guidelines. The concrete should have a minimum 28-day unconfined compressive strength of 4,000 pounds per square inch and contain 6 percent \pm 1 percent air-entrainment.

5.9 CEMENT TYPES

The laboratory tests indicate that the natural soils tested contain a negligible amount of water soluble sulfates. Based on our test results, concrete in contact with the on-site soil will have a



low potential for sulfate reaction (ACI 318, Table 4.3.1). Therefore, all concrete which will be in contact with the site soils may be prepared using Type I or IA cement.

5.10 GEOSEISMIC SETTING

5.10.1 General

Utah municipalities adopted the International Building Code (IBC) 2012 on July 1, 2013. The IBC 2012 code determines the seismic hazard for a site based upon 2008 mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class. The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points).

The structure must be designed in accordance with the procedure presented in Section 1613, Earthquake Loads, of the IBC 2012 edition.

5.10.2 Faulting

Based upon our review of the Special Study Area Map provided by Salt Lake County Planning and Development Service, no active faults are known to pass through the site and the site is outside the surface fault rupture special study areas. The nearest mapped faults are the Wasatch Fault, approximately 0.05 and 0.3 miles to the northeast and west-southwest of the site.

5.10.3 Soil Class

Based upon our review of available literature, no active faults are known to pass through or immediately adjacent to the site. The nearest mapped faults are the Wasatch Fault, approximately 11 miles to the east and the Oquirrh Fault, approximately 11 miles west of the site.

5.10.4 Ground Motions

The IBC 2012 code is based on 2008 USGS mapping, which provides values of short and long period accelerations for the Site Class B-C boundary for the Maximum Considered Earthquake (MCE). This Site Class B-C boundary represents a hypothetical bedrock surface and must be corrected for local soil conditions. The following table summarizes the peak ground and short and long period accelerations for a MCE event and incorporates a soil amplification factor for a Site Class D soil profile in the second column. Based on the site latitude and longitude (40.7709 degrees north and 111.8370 degrees west, respectively), the values for this site are tabulated on the following page.

Spectral Acceleration Value, T	Site Class B		Site Class C	
	Boundary	Site	[adjusted for site class effects]	Design
	[mapped values] (% g)	Coefficient	(% g)	Values (% g)
Peak Ground Acceleration	47.4	$F_a = 1.000$	47.4	
0.2 Seconds (Short Period Acceleration)	$S_S = 118.5$	$F_a = 1.000$	$S_{MS} = 118.5$	$S_{DS} = 79.0$
1.0 Second (Long Period Acceleration)	$S_1 = 43.5$	$F_v = 1.365$	$S_{M1} = 59.4$	$S_{D1} = 39.6$

5.10.5 Liquefaction

The site is located in an area that has been identified by the Salt Lake County as having a “low” liquefaction potential. Liquefaction is defined as the condition when saturated, loose, finer-grained sand-type soils lose their support capabilities because of excessive pore water pressure which develops during a seismic event. Clayey soils, even if saturated, will not liquefy during a major seismic event.

Liquefaction of the site soils to the depths penetrated is not anticipated during the design seismic event due to the lack of a shallow groundwater table and the dense nature of the granular soils.

Calculations were performed using the procedures described in the 2008 Soil Liquefaction During Earthquakes Monograph by Idriss and Boulanger³.

³ Idriss, I. M., and Boulanger, R. W. (2008), Soil liquefaction during earthquakes: Monograph MNO-12, Earthquake Engineering Research Institute, Oakland, CA, 261 pp.



If you have any questions or would like to discuss these items further, please feel free to contact us at (801) 685-9190.

Respectfully submitted,

GSH Geotechnical, Inc.

Michael S. Huber, P.E.
 State of Utah No. 343650
 Vice President/Senior Geotechnical Engineer



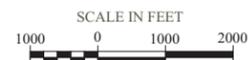
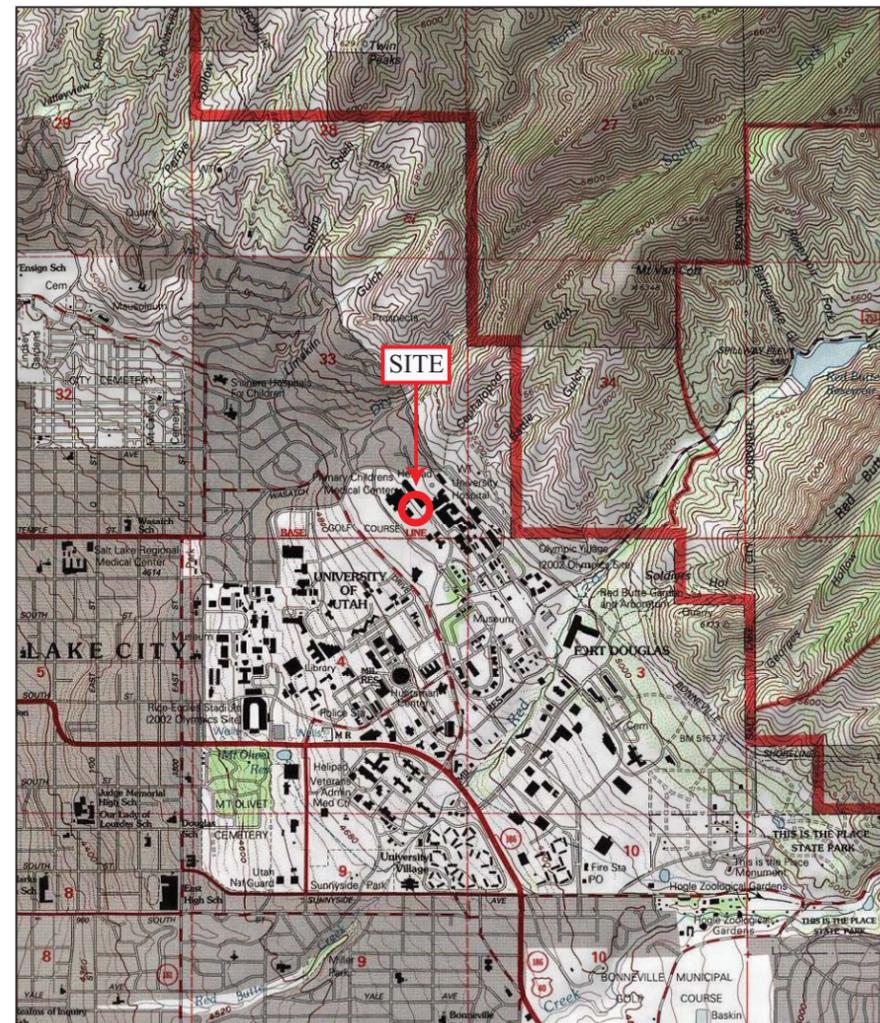
Reviewed by:

Alan D. Spilker, P.E.
 State of Utah No. 334228
 President/Senior Geotechnical Engineer

ADS/MSH:jih

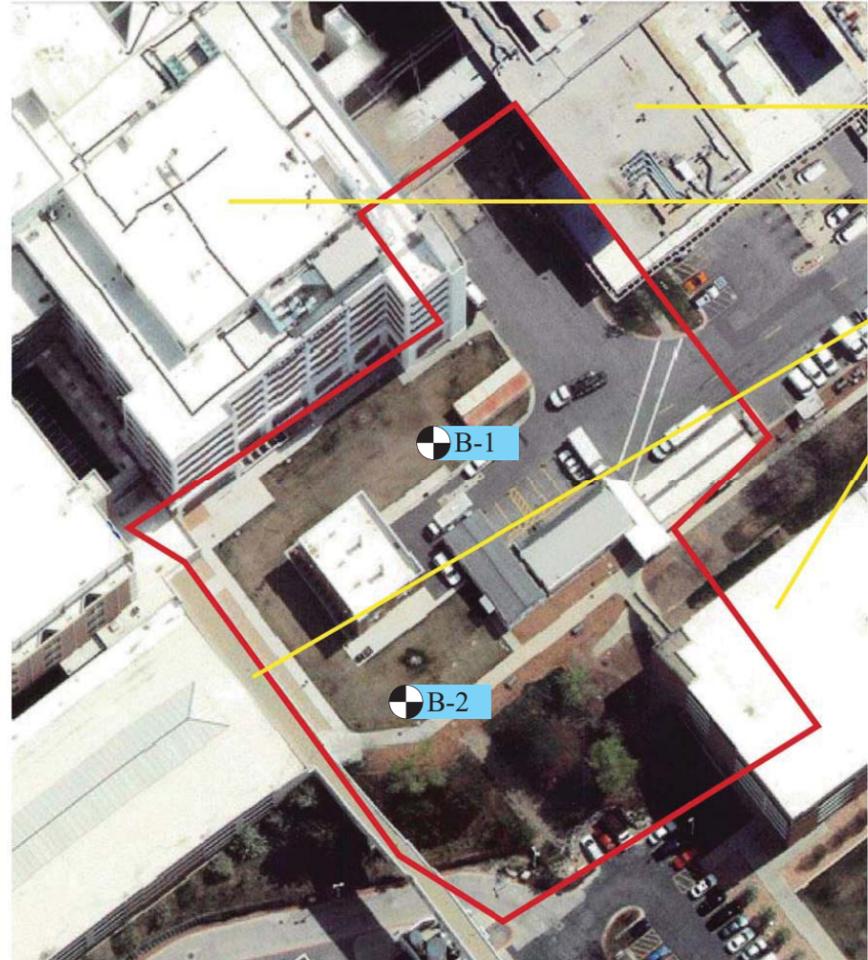
- Encl. Figure 1, Vicinity Map
- Figure 2, Site Plan
- Figures 3A and 3B, Log of Borings
- Figure 4, Key to Boring Log (USCS)

Addressee (email)



REFERENCE:
 USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP(S)
 ENTITLED "FORT DOUGLAS, UTAH" AND "SUGAR HOUSE, UTAH"
 BOTH DATED 1998

FIGURE 1
 VICINITY MAP



SCHOOL OF
MEDICINE

UNIVERSITY
OF UTAH HOS-
PITAL

CONNECTOR
TO PRIMARY
CHILDREN'S

PARKING
RAMP



REFERENCE:
ADAPTED FROM DRAWING
PROVIDED BY CLIENT

FIGURE 2
SITE PLAN
 GSH

GSH		BORING LOG		BORING: B-1							
Page: 1 of 3		PROJECT NUMBER: 0149-020-14		DATE FINISHED: 5/6/14							
CLIENT: MHTN Architects		PROJECT: Proposed Structure		DATE STARTED: 5/6/14							
LOCATION: Approximately 70 North 1900 East, Salt Lake City, Utah		DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger		GSH FIELD REP.: JW							
GROUNDWATER DEPTH: Not Encountered (5/9/14 & 5/16/14)		HAMMER: Automatic		WEIGHT: 140 lbs							
		DROP: 30"		ELEVATION: ---							
WATER LEVEL	U S C S	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								loose to 6" slightly moist stiff
		CL FINE TO COARSE SANDY CLAY, FILL with fine and coarse gravel; major roots (topsoil) to 3"; brown		18	▲	10.1	123				
		GC CLAYEY FINE GRAVEL with fine to coarse sandy clay and occasional cobbles; brown	5	11	▲	13.4	32.6				moist
		CL FINE SANDY CLAY brown	10	8							moist medium stiff
		grades light brown	15	29	▲	106	19.1				very stiff
		SM SILTY FINE TO COARSE SAND brown	20	34	▲						moist medium dense
		GC CLAYEY FINE AND COARSE GRAVEL with sand, clay, and occasional cobbles; brown	25	112	▲						slightly moist very dense

See Subsurface Conditions section in the report for additional information.

FIGURE 3A

GSH		BORING LOG		BORING: B-1						
Page: 2 of 3		CLIENT: MHTN Architects		PROJECT NUMBER: 0149-020-14						
PROJECT: Proposed Structure		DATE STARTED: 5/6/14		DATE FINISHED: 5/6/14						
WATER LEVEL	U S C S	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		25	112	☒						
		30	37		8.4	28.6				
		35	35							moist
	SM	40	51							slightly moist very dense
	GM	45	41		6.9	22.6				slightly moist very dense
		50	36							

See Subsurface Conditions section in the report for additional information.

FIGURE 3A
(continued)

GSH		BORING LOG		BORING: B-1						
Page: 3 of 3		CLIENT: MHTN Architects		PROJECT NUMBER: 0149-020-14						
PROJECT: Proposed Structure		DATE STARTED: 5/6/14		DATE FINISHED: 5/6/14						
WATER LEVEL	U S C S	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		52								End of Exploration at 51.0' No groundwater encountered at time of drilling. Installed 1.25" diameter slotted PVC pipe to 50.0'.
		55								
		60								
		65								
		70								
		75								

See Subsurface Conditions section in the report for additional information.

FIGURE 3A
(continued)

GSH		BORING LOG		BORING: B-2						
CLIENT: MHTN Architects		PROJECT NUMBER: 0149-020-14		Page: 1 of 3						
PROJECT: Proposed Structure		DATE STARTED: 5/8/14		DATE FINISHED: 5/9/14						
LOCATION: Approximately 70 North 1900 East, Salt Lake City, Utah		GSH FIELD REP.: JW								
DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger		HAMMER: Automatic		WEIGHT: 140 lbs DROP: 30"						
GROUNDWATER DEPTH: 57.5' (5/9/14) 57.4' (5/16/14)		ELEVATION: --								
WATER LEVEL	U S C S	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface								
	CL	0								loose to 6" moist medium stiff
		10								
	GM	5	4							slightly moist very loose
		10	50/2"		5.4	12.9				moist very dense
	CL	15	28		10.0	109				slightly moist very stiff
		20	26		12.8	107				grades light brown
		25	14		20.1	105				

See Subsurface Conditions section in the report for additional information.

FIGURE 3B

GSH		BORING LOG		BORING: B-2						
CLIENT: MHTN Architects		PROJECT NUMBER: 0149-020-14		Page: 2 of 3						
PROJECT: Proposed Structure		DATE STARTED: 5/8/14		DATE FINISHED: 5/9/14						
WATER LEVEL	U S C S	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		25	14		20.1	105				
		30	50/3"							slightly moist very dense
		35	54							
		40	29							medium dense
		45	17							slightly moist medium dense
		50	50/4"		13.1	33.1				very dense

See Subsurface Conditions section in the report for additional information.

FIGURE 3B (continued)

GSH		BORING LOG		BORING: B-2						
CLIENT: MHTN Architects		PROJECT NUMBER: 0149-020-14								
PROJECT: Proposed Structure		DATE STARTED: 5/8/14		DATE FINISHED: 5/9/14						
WATER LEVEL	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
U S C S	CL FINE TO COARSE SANDY CLAY brown	52								moist very stiff
	GM SILTY FINE AND COARSE GRAVEL with some fine to coarse sand and numerous cobbles; brown	55								moist very dense
	SM SILTY FINE TO COARSE SAND with some fine and coarse gravel and occasional cobbles; brown	60	60		11.5	19.0				saturated saturated very dense
		65								
		70	50/5"							
	End of Exploration at 71.0' No groundwater encountered at time of drilling. Installed 1.25" diameter slotted PVC pipe to 70.0'.	75								

See Subsurface Conditions section in the report for additional information.

FIGURE 3B
(continued)

CLIENT: MHTN Architects		PROJECT: Proposed Structure		PROJECT NUMBER: 0149-020-14		KEY TO BORING LOG																																															
WATER LEVEL	U S C S	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS																																										
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫																																										
<p>COLUMN DESCRIPTIONS</p> <p>① Water Level: Depth to measured groundwater table. See symbol below.</p> <p>② USCS: (Unified Soil Classification System) Description of soils encountered; typical symbols are explained below.</p> <p>③ Description: Description of material encountered; may include color, moisture, grain size, density/consistency.</p> <p>④ Depth (ft.): Depth in feet below the ground surface.</p> <p>⑤ Blow Count: Number of blows to advance sampler 12" beyond first 6", using a 140-lb hammer with 30" drop.</p> <p>⑥ Sample Symbol: Type of soil sample collected at depth interval shown; sampler symbols are explained below.</p> <p>⑦ Moisture (%): Water content of soil sample measured in laboratory; expressed as percentage of dryweight of</p> <p>⑧ Dry Density (pcf): The density of a soil measured in laboratory; expressed in pounds per cubic foot.</p> <p>⑨ % Passing 200: Fines content of soils sample passing a No. 200 sieve; expressed as a percentage.</p> <p>⑩ Liquid Limit (%): Water content at which a soil changes from plastic to liquid behavior.</p> <p>⑪ Plasticity Index (%): Range of water content at which a soil exhibits plastic properties.</p> <p>⑫ Remarks: Comments and observations regarding drilling or sampling made by driller or field personnel. May include other field and laboratory test results using the following abbreviations:</p> <table border="1"> <tr> <td>CEMENTATION:</td> <td>MODIFIERS:</td> <td>MOISTURE CONTENT (FIELD TEST):</td> </tr> <tr> <td>Weakly: Crumbles or breaks with handling or slight finger pressure.</td> <td>Trace <5%</td> <td>Dry: Absence of moisture, dusty, dry to the touch.</td> </tr> <tr> <td>Moderately: Crumbles or breaks with considerable finger pressure.</td> <td>Some 5-12%</td> <td>Moist: Damp but no visible water.</td> </tr> <tr> <td>Strongly: Will not crumble or break with finger pressure.</td> <td>With > 12%</td> <td>Saturated: Visible water, usually soil below water table.</td> </tr> </table> <p><small>Descriptions and stratum lines are interpretive, field descriptions may have been modified to reflect lab test results. Descriptions on the logs apply only at the specific boring locations and at the time the borings were advanced, they are not warranted to be representative of subsurface conditions at other locations or times.</small></p> <table border="1"> <tr> <th colspan="2">MAJOR DIVISIONS</th> <th>USCS SYMBOLS</th> <th>TYPICAL DESCRIPTIONS</th> <th>STRATIFICATION:</th> </tr> <tr> <td rowspan="6">COARSE-GRAINED SOILS More than 50% of material is larger than No. 200 sieve size.</td> <td>GRAVELS More than 50% of coarse fraction retained on No. 4 sieve.</td> <td>CLEAN GRAVELS (little or no fines) GW GRAVELS WITH FINES (appreciable amount of fines) GM GC</td> <td>Well-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines Silty Gravels, Gravel-Sand-Silt Mixtures Clayey Gravels, Gravel-Sand-Clay Mixtures</td> <td>DESCRIPTION THICKNESS Scum up to 1/8" Layer 1/8" to 12" Occasional: One or less per 6" of thickness Numerous: More than one per 6" of thickness</td> </tr> <tr> <td>SANDS More than 50% of coarse fraction passing through No. 4 sieve.</td> <td>CLEAN SANDS (little or no fines) SW SP SANDS WITH FINES (appreciable amount of fines) SM SC</td> <td>Well-Graded Sands, Gravelly Sands, Little or No Fines Poorly-Graded Sands, Gravelly Sands, Little or No Fines Silty Sands, Sand-Silt Mixtures Clayey Sands, Sand-Clay Mixtures</td> <td>TYPICAL SAMPLER GRAPHIC SYMBOLS Bulk/Bag Sample Standard Penetration Split Spoon Sampler Rock Core No Recovery 3.25" OD, 2.42" ID D&M Sampler 3.0" OD, 2.42" ID D&M Sampler California Sampler Thin Wall</td> </tr> <tr> <td rowspan="4">FINE-GRAINED SOILS More than 50% of material is smaller than No. 200 sieve size.</td> <td rowspan="2">SILTS AND CLAYS Liquid Limit less than 50%</td> <td>ML</td> <td>Inorganic Silts and Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity</td> <td rowspan="4">WATER SYMBOL Water Level</td> </tr> <tr> <td>CL</td> <td>Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays</td> </tr> <tr> <td rowspan="2">SILTS AND CLAYS Liquid Limit greater than 50%</td> <td>MH</td> <td>Organic Silts and Organic Silty Clays of Low Plasticity</td> </tr> <tr> <td>CH</td> <td>Inorganic Clays of High Plasticity, Fat Clays</td> </tr> <tr> <td colspan="2">HIGHLY ORGANIC SOILS</td> <td>PT</td> <td>Peat, Humus, Swamp Soils with High Organic Contents</td> </tr> </table> <p>Note: Dual Symbols are used to indicate borderline soil classifications.</p>												CEMENTATION:	MODIFIERS:	MOISTURE CONTENT (FIELD TEST):	Weakly: Crumbles or breaks with handling or slight finger pressure.	Trace <5%	Dry: Absence of moisture, dusty, dry to the touch.	Moderately: Crumbles or breaks with considerable finger pressure.	Some 5-12%	Moist: Damp but no visible water.	Strongly: Will not crumble or break with finger pressure.	With > 12%	Saturated: Visible water, usually soil below water table.	MAJOR DIVISIONS		USCS SYMBOLS	TYPICAL DESCRIPTIONS	STRATIFICATION:	COARSE-GRAINED SOILS More than 50% of material is larger than No. 200 sieve size.	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve.	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FIGURE 4
GSH

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

CONCEPTUAL COST OPINION - Rev. 2

Recap - Systems Format



30-May-14

SYSTEM	SYSTEM DESCRIPTION	Option 1			Option 2			Option 3			Option 4			Option 5			Alternate 1		
		BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF
		3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.			4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.			Infill two levels in current unexcavated area which match building 525 B Levels		
	BUILDING COSTS	Unit Costs																	
1	Footing & Foundation	108,229	\$1,292,240	\$11.94	137,353	\$1,445,141	\$10.52	229,377	\$1,940,867	\$8.46	229,377	\$1,940,867	\$8.46	229,377	\$1,940,867	\$8.46	28,918	\$151,820	\$5.25
	Building Frame - Conventional Spread Footing System - sf	108,229	\$568,202		137,353	\$721,103		229,377	\$1,204,229		229,377	\$1,204,229		229,377	\$1,204,229		28,918	\$151,820	
	Building Frame - Foundation Walls - vsf	18,250	\$661,563		18,250	\$661,563		18,250	\$661,563		18,250	\$661,563		18,250	\$661,563		0	\$0	
	Building Frame - Imported Compacted Engineer Fill - cy	1,867	\$33,600		1,867	\$33,600		1,867	\$33,600		1,867	\$33,600		1,867	\$33,600		0	\$0	
	Landscape Plaza Areas - Upgrade to Conventional Spread Footing System - sf	5,500	\$28,875		5,500	\$28,875		7,900	\$41,475		7,900	\$41,475		7,900	\$41,475		0	\$0	
2	Structure	108,229	\$3,486,351	\$32.21	137,353	\$4,365,314	\$31.78	229,377	\$7,238,598	\$31.56	229,377	\$7,238,598	\$31.56	229,377	\$7,238,598	\$31.56	28,918	\$872,745	\$30.18
	Building Frame - sf	108,229	\$3,266,351		137,353	\$4,145,314		229,377	\$6,922,598		229,377	\$6,922,598		229,377	\$6,922,598		28,918	\$872,745	
	Landscape Plaza Areas - sf	5,500	\$220,000		5,500	\$220,000		7,900	\$316,000		7,900	\$316,000		7,900	\$316,000		0	\$0	
3	Exterior Closure	108,229	\$3,925,438	\$36.27	137,353	\$5,043,066	\$36.72	229,377	\$8,552,698	\$37.29	229,377	\$8,552,698	\$37.29	229,377	\$8,552,698	\$37.29	28,918	\$42,240	\$1.46
	Below Grade - Dampproofing / Waterproofing	16,016	\$128,128		16,016	\$128,128		16,016	\$128,128		16,016	\$128,128		16,016	\$128,128		5,280	\$42,240	
	Above Grade - vsf	31,521	\$3,467,310		41,681	\$4,584,938		73,587	\$8,094,570		73,587	\$8,094,570		73,587	\$8,094,570		0	\$0	
	Roof Parapets	3,000	\$330,000		3,000	\$330,000		3,000	\$330,000		3,000	\$330,000		3,000	\$330,000		0	\$0	
4	Roofing	108,229	\$360,469	\$3.33	137,353	\$360,469	\$2.62	229,377	\$384,469	\$1.68	229,377	\$384,469	\$1.68	229,377	\$384,469	\$1.68	28,918	\$0	\$0.00
	Roofing System - sf	33,189	\$275,469		33,189	\$275,469		33,189	\$275,469		33,189	\$275,469		33,189	\$275,469		0	\$0	
	Roofing Parapets - sf	3,000	\$30,000		3,000	\$30,000		3,000	\$30,000		3,000	\$30,000		3,000	\$30,000		0	\$0	
	Landscape Plaza Waterproofing System - sf	5,500	\$55,000		5,500	\$55,000		7,900	\$79,000		7,900	\$79,000		7,900	\$79,000		0	\$0	
5	Interior Finishes	108,229	\$5,082,640	\$46.96	137,353	\$6,874,204	\$50.05	229,377	\$12,484,816	\$54.43	229,377	\$10,803,537	\$47.10	229,377	\$7,839,444	\$34.18	28,918	\$1,235,629	\$42.73
	Mechanical / Back -of-house Space - sf	17,211	\$516,330		17,211	\$516,330		17,211	\$516,330		17,211	\$516,330		17,211	\$516,330		0	\$0	
	Shell Space - sf	0	\$0		0	\$0		0	\$0		0	\$0		92,024	\$920,240		0	\$0	
	General / Office / Administration Use - sf	62,313	\$2,630,232		62,313	\$2,630,232		62,313	\$2,630,232		154,337	\$6,514,565		62,313	\$2,630,232		28,918	\$1,220,629	
	Clinical Use - Type 'B' - sf	28,705	\$1,736,078		28,705	\$1,736,078		120,729	\$7,301,690		28,705	\$1,736,078		28,705	\$1,736,078		0	\$0	
	Out-patient Surgery - sf	0	\$0		29,124	\$1,776,564		29,124	\$1,776,564		29,124	\$1,776,564		29,124	\$1,776,564		0	\$0	
	Interior Open Space	4,000	\$80,000		4,000	\$80,000		4,000	\$80,000		4,000	\$80,000		4,000	\$80,000		0	\$0	
	Patch & Repair Penetration Areas into Existing	8	\$120,000		9	\$135,000		12	\$180,000		12	\$180,000		12	\$180,000		1	\$15,000	
		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
6	Conveying Systems - One per 40,000 sf	108,229	\$480,000	\$4.44	137,353	\$640,000	\$4.66	229,377	\$960,000	\$4.19	229,377	\$960,000	\$4.19	229,377	\$960,000	\$4.19	28,918	\$160,000	\$5.53
	Geared Elevators - per Elevator	3	\$450,000		4	\$600,000		6	\$900,000		6	\$900,000		6	\$900,000		1	\$150,000	
	Elevator Cab Finishes - per cab	3	\$30,000		4	\$40,000		6	\$60,000		6	\$60,000		6	\$60,000		1	\$10,000	
7	Special Systems / Equipment	108,229	\$648,733	\$5.99	137,353	\$1,306,935	\$9.52	229,377	\$3,386,678	\$14.76	229,377	\$1,306,935	\$5.70	229,377	\$1,306,935	\$5.70	28,918	\$0	\$0.00
	Clinical Use - Type 'B' - sf	28,705	\$648,733		28,705	\$648,733		120,729	\$2,728,475		28,705	\$648,733		28,705	\$648,733		0	\$0	
	Laboratory Space - sf	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
	Out-Patient Surgery Space - sf	0	\$0		29,124	\$658,202		29,124	\$658,202		29,124	\$658,202		29,124	\$658,202		0	\$0	
8	Mechanical	108,229	\$5,228,394	\$48.31	137,353	\$7,039,324	\$51.25	229,377	\$12,761,376	\$55.63	229,377	\$8,950,662	\$39.02	229,377	\$9,576,426	\$41.75	28,918	\$1,349,892	\$46.68
	Plumbing - Mechanical / Back -of-house Space - sf	17,211	\$129,083		17,211	\$129,083		17,211	\$129,083		17,211	\$129,083		17,211	\$129,083		0	\$0	
	Plumbing - Shell Space - sf	0	\$0		0	\$0		0	\$0		0	\$0		92,024	\$920,240		0	\$0	
	Plumbing - General / Office / Administration Use - sf	62,313	\$1,071,784		62,313	\$1,071,784		62,313	\$1,071,784		154,337	\$2,654,596		62,313	\$1,071,784		28,918	\$497,390	
	Plumbing - Clinical Use - Type 'B' - sf	28,705	\$569,794		28,705	\$569,794		120,729	\$2,396,471		28,705	\$569,794		28,705	\$569,794		0	\$0	
	Plumbing - Out-patient Surgery - sf	0	\$0		29,124	\$578,111		29,124	\$578,111		29,124	\$578,111		29,124	\$578,111		0	\$0	
		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
	HVAC - Mechanical / Back -of-house Space - sf	17,211	\$344,220		17,211	\$344,220		17,211	\$344,220		17,211	\$344,220		17,211	\$344,220		0	\$0	

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

CONCEPTUAL COST OPINION - Rev. 2

Recap - Systems Format



30-May-14

SYSTEM	SYSTEM DESCRIPTION	Option 1			Option 2			Option 3			Option 4			Option 5			Alternate 1			
		BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	
		3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.			4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.			Infill two levels in current unexcavated area which match building 525 B Levels			
	BUILDING COSTS																			
	Unit Costs																			
	HVAC - Shell Space - sf	\$ 15.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	92,024	\$1,380,360	0	\$0	0	
	HVAC - General / Office / Administration Use - sf	\$ 25.91	62,313	\$1,614,530	62,313	\$1,614,530	62,313	\$1,614,530	62,313	\$1,614,530	62,313	\$1,614,530	62,313	\$1,614,530	62,313	\$1,614,530	28,918	\$749,265	0	
	HVAC - Clinical Use - Type 'B' - sf	\$ 38.58	28,705	\$1,107,439	28,705	\$1,107,439	120,729	\$4,657,725	28,705	\$1,107,439	28,705	\$1,107,439	28,705	\$1,107,439	28,705	\$1,107,439	0	\$0	0	
	HVAC - Out-patient Surgery - sf	\$ 38.58	0	\$0	29,124	\$1,123,604	29,124	\$1,123,604	29,124	\$1,123,604	29,124	\$1,123,604	29,124	\$1,123,604	29,124	\$1,123,604	0	\$0	0	
	Fire Protection - Mechanical / Back -of-house Space - sf	\$ 3.57	17,211	\$61,443	17,211	\$61,443	17,211	\$61,443	17,211	\$61,443	17,211	\$61,443	17,211	\$61,443	17,211	\$61,443	0	\$0	0	
	Fire Protection - Shell Space - sf	\$ 2.57	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	92,024	\$236,502	0	\$0	0	
	Fire Protection - General / Office / Administration Use - sf	\$ 3.57	62,313	\$222,457	62,313	\$222,457	62,313	\$222,457	154,337	\$550,983	62,313	\$222,457	62,313	\$222,457	28,918	\$103,237	0	\$0	0	
	Fire Protection - Clinical Use - Type 'B' - sf	\$ 3.75	28,705	\$107,644	28,705	\$107,644	120,729	\$452,734	28,705	\$107,644	28,705	\$107,644	28,705	\$107,644	28,705	\$107,644	0	\$0	0	
	Fire Protection - Out-patient Surgery - sf	\$ 3.75	0	\$0	29,124	\$109,215	29,124	\$109,215	29,124	\$109,215	29,124	\$109,215	29,124	\$109,215	29,124	\$109,215	0	\$0	0	
9	Electrical		108,229	\$2,909,531	\$26.88	137,353	\$3,836,256	\$27.93	229,377	\$6,764,460	\$29.49	229,377	\$6,275,813	\$27.36	229,377	\$5,216,616	\$22.74	28,918	\$766,616	\$26.51
	Electrical - Mechanical / Back -of-house Space	\$ 20.00	17,211	\$344,220	17,211	\$344,220	17,211	\$344,220	17,211	\$344,220	17,211	\$344,220	17,211	\$344,220	17,211	\$344,220	0	\$0	0	\$0
	Electrical - Shell Space	\$ 15.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	92,024	\$1,380,360	0	\$0	0	\$0
	Electrical - General / Office / Administration Use	\$ 26.51	62,313	\$1,651,918	62,313	\$1,651,918	62,313	\$1,651,918	154,337	\$4,091,474	62,313	\$1,651,918	62,313	\$1,651,918	28,918	\$766,616	0	\$0	0	\$0
	Electrical - Clinical Use	\$ 31.82	28,705	\$913,393	28,705	\$913,393	120,729	\$3,841,597	28,705	\$913,393	28,705	\$913,393	28,705	\$913,393	28,705	\$913,393	0	\$0	0	\$0
	Electrical- Out-patient Surgery	\$ 31.82	0	\$0	29,124	\$926,726	29,124	\$926,726	29,124	\$926,726	29,124	\$926,726	29,124	\$926,726	29,124	\$926,726	0	\$0	0	\$0
10	Miscellaneous Items		108,229	\$1,756,035	\$16.23	137,353	\$2,318,303	\$16.88	229,377	\$4,085,547	\$17.81	229,377	\$3,481,018	\$15.18	229,377	\$3,226,204	\$14.07	28,918	\$343,421	\$11.88
	Congested Site Premium	7.5%	1	\$1,756,035	1	\$2,318,303	1	\$4,085,547	1	\$4,085,547	1	\$3,481,018	1	\$3,226,204	1	\$3,226,204	1	\$343,421	1	\$343,421
	BUILDING SUBTOTAL:		108,229	\$25,169,830	\$232.56	137,353	\$33,229,011	\$241.92	229,377	\$58,559,508	\$255.30	229,377	\$49,894,597	\$217.52	229,377	\$46,242,257	\$201.60	28,918	\$4,922,363	\$170.22
	SITWORK COSTS																			
11	On-Site Sitework Improvements		108,229	\$4,813,998	\$44.48	137,353	\$4,813,998	\$35.05	229,377	\$4,873,998	\$21.25	229,377	\$4,873,998	\$21.25	229,377	\$4,873,998	\$21.25	28,918	\$344,874	\$11.93
	Demolition / Shoring / Excavation																			
	Demolition - Site	\$ 2.50	66,400	\$166,000	66,400	\$166,000	66,400	\$166,000	66,400	\$166,000	66,400	\$166,000	66,400	\$166,000	66,400	\$166,000	0	\$0	0	\$0
	Demolition - Building	\$ 20.00	3,012	\$60,240	3,012	\$60,240	3,012	\$60,240	3,012	\$60,240	3,012	\$60,240	3,012	\$60,240	3,012	\$60,240	0	\$0	0	\$0
	Demolition - Existing Tower Crane Footing	\$ 25.00	150	\$3,750	150	\$3,750	150	\$3,750	150	\$3,750	150	\$3,750	150	\$3,750	150	\$3,750	0	\$0	0	\$0
	Demolition - Existing Earth Shoring Wall - vsf	\$ 10.00	3,190	\$31,900	3,190	\$31,900	3,190	\$31,900	3,190	\$31,900	3,190	\$31,900	3,190	\$31,900	3,190	\$31,900	0	\$0	0	\$0
	Temporary Vertical Earth Shoring	\$ 50.00	11,163	\$558,125	11,163	\$558,125	11,163	\$558,125	11,163	\$558,125	11,163	\$558,125	11,163	\$558,125	11,163	\$558,125	0	\$0	0	\$0
	Mass Excavation - Building Pad Area	\$ 8.00	22,790	\$182,316	22,790	\$182,316	22,790	\$182,316	22,790	\$182,316	22,790	\$182,316	22,790	\$182,316	22,790	\$182,316	13,923	\$111,388	0	\$0
	Mass Excavation - Building Pad Haul-off	\$ 14.00	22,790	\$319,054	22,790	\$319,054	22,790	\$319,054	22,790	\$319,054	22,790	\$319,054	22,790	\$319,054	22,790	\$319,054	13,923	\$194,929	0	\$0
	Backfill - Building Pad	\$ 18.00	5,483	\$98,692	5,483	\$98,692	5,483	\$98,692	5,483	\$98,692	5,483	\$98,692	5,483	\$98,692	5,483	\$98,692	2,142	\$38,557	0	\$0
	Mass Excavation - West Slope Area	\$ 10.00	5,926	\$59,259	5,926	\$59,259	5,926	\$59,259	5,926	\$59,259	5,926	\$59,259	5,926	\$59,259	5,926	\$59,259	0	\$0	0	\$0
	Mass Excavation - West Slope Haul-off	\$ 14.00	5,926	\$82,963	5,926	\$82,963	5,926	\$82,963	5,926	\$82,963	5,926	\$82,963	5,926	\$82,963	5,926	\$82,963	0	\$0	0	\$0
	Backfill - West Slope Reconstruction	\$ 18.00	5,926	\$106,667	5,926	\$106,667	5,926	\$106,667	5,926	\$106,667	5,926	\$106,667	5,926	\$106,667	5,926	\$106,667	0	\$0	0	\$0
	Mass Excavation - Temporary Ramp	\$ 10.00	2,800	\$28,000	2,800	\$28,000	2,800	\$28,000	2,800	\$28,000	2,800	\$28,000	2,800	\$28,000	2,800	\$28,000	0	\$0	0	\$0
	Mass Excavation - Temporary Ramp Haul-off	\$ 14.00	2,800	\$39,200	2,800	\$39,200	2,800	\$39,200	2,800	\$39,200	2,800	\$39,200	2,800	\$39,200	2,800	\$39,200	0	\$0	0	\$0
	Mass Backfill - Temporary Ramp Import & Backfill	\$ 22.00	2,800	\$61,600	2,800	\$61,600	2,800	\$61,600	2,800	\$61,600	2,800	\$61,600	2,800	\$61,600	2,800	\$61,600	0	\$0	0	\$0
	West Slope Vertical Retaining Structures - sf	\$ 65.00	8,000	\$520,000	8,000	\$520,000	8,000	\$520,000	8,000	\$520,000	8,000	\$520,000	8,000	\$520,000	8,000	\$520,000	0	\$0	0	\$0
	West Slope Pedestrian Walkways - sf	\$ 6.50	8,000	\$52,000	8,000	\$52,000	8,000	\$52,000	8,000	\$52,000	8,000	\$52,000	8,000	\$52,000	8,000	\$52,000	0	\$0	0	\$0
	West Slope Pedestrian Stairs - lf	\$ 15.00	842	\$12,632	842	\$12,632	842	\$12,632	842	\$12,632	842	\$12,632	842	\$12,632	842	\$12,632	0	\$0	0	\$0
	Suspended Pedestrian Corridor - South & West Sides of Building	\$ 46.50	7,700	\$358,050	7,700	\$358,050	7,700	\$358,050	7,700	\$358,050	7,700	\$358,050	7,700	\$358,050	7,700	\$358,050	0	\$0	0	\$0
	Landscaping - Site	\$ 10.00	20,000	\$200,000	20,000	\$200,000	20,000	\$200,000	20,000	\$200,000	20,000	\$200,000	20,000	\$200,000	20,000	\$200,000	0	\$0	0	\$0
	Landscaping - Courtyards	\$ 25.00	5,500	\$137,500	5,500	\$137,500	7,900	\$197,500	7,900	\$197,500	7,900	\$197,500	7,900	\$197,500	7,900	\$197,500	0	\$0	0	\$0
	Site Paving	\$ 7.00	10,000	\$70,000	10,000	\$70,000	10,000	\$70,000	10,000	\$70,000	10,000	\$70,000	10,000	\$70,000	10,000	\$70,000	0	\$0	0	\$0

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

CONCEPTUAL COST OPINION - Rev. 2

Recap - Systems Format



30-May-14

SYSTEM	SYSTEM DESCRIPTION	Option 1			Option 2			Option 3			Option 4			Option 5			Alternate 1			
		BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	
		3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.			4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.			Infill two levels in current unexcavated area which match building 525 B Levels			
	BUILDING COSTS																			
	Unit Costs																			
	Site Utility - 12" HTW Relocation - Supply and Return - If	\$ 500.00	500	\$250,000	500	\$250,000		500	\$250,000		500	\$250,000		500	\$250,000		0	\$0		
	Site Utility - Bldg 522 Grease Trap Relocation - ea	\$ 12,500.00	1	\$12,500	1	\$12,500		1	\$12,500		1	\$12,500		1	\$12,500		0	\$0		
	Site Utility - Bldg 522 Sanitary Sewer Line Relocation - If	\$ 65.00	250	\$16,250	250	\$16,250		250	\$16,250		250	\$16,250		250	\$16,250		0	\$0		
	Site Utility - Reroute 10" sewer line -20' Deep - If	\$ 85.00	325	\$27,625	325	\$27,625		325	\$27,625		325	\$27,625		325	\$27,625		0	\$0		
	Site Utility - Reroute 16" Water Line - If	\$ 95.00	500	\$47,500	500	\$47,500		500	\$47,500		500	\$47,500		500	\$47,500		0	\$0		
	Site Utility - Reroute bldg 522 Storm Drain & Footing Drain - If	\$ 65.00	350	\$22,750	350	\$22,750		350	\$22,750		350	\$22,750		350	\$22,750		0	\$0		
	Site Utility - Reroute 12" Storm Drain Line through building	\$ 70.00	265	\$18,550	265	\$18,550		265	\$18,550		265	\$18,550		265	\$18,550		0	\$0		
	Site Utility - Reconfigure HPS Line - Supply and Condensate - If	\$ 135.00	275	\$37,125	275	\$37,125		275	\$37,125		275	\$37,125		275	\$37,125		0	\$0		
	Site Utility - Reconfigure NG line - If	\$ 50.00	275	\$13,750	275	\$13,750		275	\$13,750		275	\$13,750		275	\$13,750		0	\$0		
	Site Utility - Relocation of 20,000 gal Fuel Oil Tank - ea	\$ 40,000.00	1	\$40,000	1	\$40,000		1	\$40,000		1	\$40,000		1	\$40,000		0	\$0		
	Site Utility - New Electrical Vaults - ea	\$ 35,000.00	2	\$70,000	2	\$70,000		2	\$70,000		2	\$70,000		2	\$70,000		0	\$0		
	Site Utility - New Communication Vault - ea	\$ 35,000.00	1	\$35,000	1	\$35,000		1	\$35,000		1	\$35,000		1	\$35,000		0	\$0		
	Site Utility - Reroute Electric Power to Bldg to 522-If	\$ 150.00	200	\$30,000	200	\$30,000		200	\$30,000		200	\$30,000		200	\$30,000		0	\$0		
	Site Utility - Reroute Electric Power to West Parking Terrace - If	\$ 75.00	150	\$11,250	150	\$11,250		150	\$11,250		150	\$11,250		150	\$11,250		0	\$0		
	Site Utility - Reroute Electric Power to West - toward Morain Eye - If	\$ 95.00	500	\$47,500	500	\$47,500		500	\$47,500		500	\$47,500		500	\$47,500		0	\$0		
	Site Utility - Construct Utility Tunnel for Wet Utilities and Electrical & Communication Bypass - If	\$ 950.00	415	\$394,250	415	\$394,250		415	\$394,250		415	\$394,250		415	\$394,250		0	\$0		
	Site Utility - Reroute Communication Lines - If	\$ 300.00	250	\$75,000	250	\$75,000		250	\$75,000		250	\$75,000		250	\$75,000		0	\$0		
	Site Utility - Reroute 6" Fire Water Line - If	\$ 85.00	200	\$17,000	200	\$17,000		200	\$17,000		200	\$17,000		200	\$17,000		0	\$0		
	Site Utilities - Misc Other	\$ 150,000.00	1	\$150,000	1	\$150,000		1	\$150,000		1	\$150,000		1	\$150,000		0	\$0		
	Boiler Relocation Costs - ea	\$ 175,000.00	2	\$350,000	2	\$350,000		2	\$350,000		2	\$350,000		2	\$350,000		0	\$0		
				\$0		\$0			\$0			\$0			\$0		0	\$0		
12	Off - Site Improvements		108,229	\$0	\$0.00	137,353	\$0	\$0.00	229,377	\$0	\$0.00	229,377	\$0	\$0.00	229,377	\$0	\$0.00	28,918	\$0	\$0.00
	SITWORK SUBTOTAL:		108,229	\$4,813,998	\$44.48	137,353	\$4,813,998	\$35.05	229,377	\$4,873,998	\$21.25	229,377	\$4,873,998	\$21.25	229,377	\$4,873,998	\$21.25	28,918	\$344,874	\$11.93
	ADMINISTRATION & FEES																			
13	General Conditions	23%	108,229	\$6,746,361	\$62.33	137,353	\$8,559,677	\$62.32	229,377	\$14,272,539	\$62.22	229,377	\$12,322,934	\$53.72	229,377	\$11,501,157	\$50.14	28,918	\$1,185,128	\$40.98
14	Testing / Inspections		108,229	By Owner	\$0.00	137,353	By Owner	\$0.00	229,377	By Owner	\$0.00	229,377	By Owner	\$0.00	229,377	By Owner	\$0.00	28,918	By Owner	\$0.00
15	Allowances		108,229	By Owner	\$0.00	137,353	By Owner	\$0.00	229,377	By Owner	\$0.00	229,377	By Owner	\$0.00	229,377	By Owner	\$0.00	28,918	By Owner	\$0.00
16	Permits / Fees / Bonds etc.	Incl in GC	108,229	Included in GCs above	\$0.00	137,353	Included in GCs above	\$0.00	229,377	Included in GCs above	\$0.00	229,377	Included in GCs above	\$0.00	229,377	Included in GCs above	\$0.00	28,918	Included in GCs above	\$0.00
17	A/E Reimbursable / Fees		108,229	By Owner	\$0.00	137,353	By Owner	\$0.00	229,377	By Owner	\$0.00	229,377	By Owner	\$0.00	229,377	By Owner	\$0.00	28,918	By Owner	\$0.00
18	Contingency	Incl in GC	108,229	Included in GCs above	\$0.00	137,353	Included in GCs above	\$0.00	229,377	Included in GCs above	\$0.00	229,377	Included in GCs above	\$0.00	229,377	Included in GCs above	\$0.00	28,918	Included in GCs above	\$0.00
	ADMINISTRATION & FEES SUBTOTAL:		108,229	\$6,746,361	\$62.33	137,353	\$8,559,677	\$62.32	229,377	\$14,272,539	\$62.22	229,377	\$12,322,934	\$53.72	229,377	\$11,501,157	\$50.14	28,918	\$1,185,128	\$40.98
	CONSTRUCTION COST TOTAL:		108,229	\$36,730,189	\$339.37	137,353	\$46,602,686	\$339.29	229,377	\$77,706,045	\$338.77	229,377	\$67,091,529	\$292.49	229,377	\$62,617,412	\$272.99	28,918	\$6,452,365	\$223.13

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

CONCEPTUAL COST OPINION - Rev. 2

Recap - Systems Format



30-May-14

SYSTEM	SYSTEM DESCRIPTION	Option 1			Option 2			Option 3			Option 4			Option 5			Alternate 1		
		BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF	BUILDING SF	COST	BLDG. COST/SF
		3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.			4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.			Infill two levels in current unexcavated area which match building 525 B Levels		
BUILDING COSTS		Unit Costs																	

Floor Level Description	Option 1 Facility			Option 2 Facility			Option 3 Facility			Option 4 Facility			Option 5 Facility			Alternate 1		
	Floor Area - sf	Perimeter - lf	Flr to Flr - ft	Floor Area - sf	Perimeter - lf	Flr to Flr - ft	Floor Area - sf	Perimeter - lf	Flr to Flr - ft	Floor Area - sf	Perimeter - lf	Flr to Flr - ft	Floor Area - sf	Perimeter - lf	Flr to Flr - ft	Floor Area - sf	Perimeter - lf	Flr to Flr - ft
Level - BL - Mechanical / Back of House - Alt is Office / General Use	17,211	728	22	17,211	728	22	17,211	728	22	17,211	728	22	17,211	728	22	28,918	240	22
Level - A - General Use / Administration	33,189	750	14.25	33,189	750	14.25	33,189	750	14.25	33,189	750	14.25	33,189	750	14.25			
Level - 1 - Clinical	28,705	750	14.25	28,705	750	14.25	28,705	750	14.25	28,705	750	14.25	28,705	750	14.25			
Level - 2 - General Use / Administration	29,124	712	14.25	29,124	712	14.25	29,124	712	14.25	29,124	712	14.25	29,124	712	14.25			
Level - 3 - Outpatient Surgery				29,124	713	14.25	29,124	713	14.25	29,124	713	14.25	29,124	713	14.25			
Level - 4 - Clinical or Office or Shell							29,812	733	14.25	29,812	733	14.25	29,812	733	14.25			
Level - 5 - Clinical or Office or Shell							31,711	753	14.25	31,711	753	14.25	31,711	753	14.25			
Level - 6 - Clinical or Office or Shell							30,501	753	14.25	30,501	753	14.25	30,501	753	14.25			
Total	108,229	2,940	64.75	137,353	3,653	79	229,377	5,892	121.75	229,377	5,892	121.75	229,377	5,892	121.75	28,918	240	22
Roof Information - Minimum	33,189	750	4	33189	750	4	33189	750	4	33189	750	4	33189	750	4			
Landscape Courtyard Areas	Floor Area - sf	Floor Area - sf			Floor Area - sf													
Level 2	5,500	5,500			5,500			5,500			5,500			-				
Level 4	-	-			1,200			1,200			1,200			-				
Level 6	-	-			1,200			1,200			1,200			-				

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Feasibility Floor Plan Study

OWNER'S CONCEPTUAL COST OPINION - Rev. 2

Recap - Systems Format



30-May-14

SYSTEM	OWNER /DEVELOPMENT CONSTRUCTION RELATED COSTS	Unit Cost	Option 1			Option 2			Option 3			Option 4			Option 5			Alternate 1		
			Quantity	Cost	Cost / Bldg SF	Quantity	Cost	Cost / Bldg SF	Quantity	Cost	Cost / Bldg SF	Quantity	Cost	Cost / Bldg SF	Quantity	Cost	Cost / Bldg SF	Quantity	Cost	Cost / Bldg SF
			3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.			4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.			Infill two levels in current unexcavated area which match building 525 B Levels		
1	Utility Fee Costs		108,229	\$57,050	\$ 0.53	137,353	\$60,965	\$ 0.44	229,377	\$73,385	\$ 0.32	229,377	\$73,385	\$ 0.32	229,377	\$73,385	\$ 0.32	28,918	\$3,915	\$ 0.14
A	Water Connection / Upgrade Use Fee - Assume 3" Meter	\$ 27,661.06	1	\$27,661		1	\$27,661		1	\$27,661		1	\$27,661		1	\$27,661		0	\$0	
B	Sanitary Sewer Connection / Upgrade Use Fee	\$ 27.00	542	\$14,634		687	\$18,549		1,147	\$30,969		1,147	\$30,969		1,147	\$30,969		145	\$3,915	
C	Electrical Connection / Upgrade Use Fee - Allowance	\$ 10,000.00	1	\$10,000		1	\$10,000		1	\$10,000		1	\$10,000		1	\$10,000		0	\$0	
D	Storm Water Connection / Upgrade Use Fee - acre	\$ 1,585.00	3	\$4,755		3	\$4,755		3	\$4,755		3	\$4,755		3	\$4,755		0	\$0	
E	Fire Impact Fee - Not Applicable to U of U Projects	\$ -	108,229	\$0		137,353	\$0		229,377	\$0		229,377	\$0		229,377	\$0		28,918	\$0	
F	Police Impact Fee - Not Applicable to U of U Projects	\$ -	108,229	\$0		137,353	\$0		229,377	\$0		229,377	\$0		229,377	\$0		28,918	\$0	
G	Roadway Impact Fee - Not Applicable to U of U Projects	\$ -	108,229	\$0		137,353	\$0		229,377	\$0		229,377	\$0		229,377	\$0		28,918	\$0	
2	Additional Construction Costs Details:		108,229	\$680,000	\$ 6.28	137,353	\$765,000	\$ 5.57	229,377	\$1,020,000	\$ 4.45	229,377	\$1,020,000	\$ 4.45	229,377	\$1,020,000	\$ 4.45	28,918	\$85,000	\$ 2.94
A	Renovation of Existing Building Floor at Connection - Level BL - One location	\$ 85.00	1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		1,000	\$85,000	
B	Renovation of Existing Building Floor at Connection - Level A - 2 locations	\$ 85.00	2,000	\$170,000		2,000	\$170,000		2,000	\$170,000		2,000	\$170,000		2,000	\$170,000		0	\$0	
C	Renovation of Existing Building Floor at Connection - Level 1- four locations	\$ 85.00	4,000	\$340,000		4,000	\$340,000		4,000	\$340,000		4,000	\$340,000		4,000	\$340,000		0	\$0	
D	Renovation of Existing Building Floor at Connection - Level 2 - one location	\$ 85.00	1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		0	\$0	
E	Renovation of Existing Building Floor at Connection - Level 3 - one location	\$ 85.00	0	\$0		1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		1,000	\$85,000		0	\$0	
F	Renovation of Existing Building Floor at Connection - Level 4,5, & 6 - one location per floor	\$ 85.00	0	\$0		0	\$0		3,000	\$255,000		3,000	\$255,000		3,000	\$255,000		0	\$0	
G	TBD			\$0			\$0			\$0			\$0			\$0			\$0	
3	Additional Site Cost Details:		108,229	\$212,500	\$ 1.96	137,353	\$212,500	\$ 1.55	229,377	\$212,500	\$ 0.93	229,377	\$212,500	\$ 0.93	229,377	\$212,500	\$ 0.93	28,918	\$0	\$ -
A	Modify Existing Site Parking Area - West side of Project	\$ 8.50	25,000	\$212,500		25,000	\$212,500		25,000	\$212,500		25,000	\$212,500		25,000	\$212,500		0	\$0	
B	TBD		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
C	TBD		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
D	TBD		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
E	TBD		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
4	High Performance Building Costs	1.50%	108,229	\$565,196	\$5.22	137,353	\$714,617	\$5.20	229,377	\$1,185,179	\$5.17	229,377	\$1,025,961	\$4.47	229,377	\$958,849	\$4.18	28,918	\$98,119	\$3.39
5	Inflation Escalation Factor - Annualized	3.65%	108,229	\$2,218,956	\$20.50	137,353	\$2,804,836	\$20.42	229,377	\$4,649,839	\$20.27	229,377	\$4,026,040	\$17.55	229,377	\$3,763,103	\$16.41	28,918	\$385,319	\$13.32
A	Base Cost Date	1-Jun-14																		
B	Estimated Bid Date	1-Jan-16																		
C	Estimated Completion Date	1-Jan-18																		
6	Location Factor	1%	108,229	\$383,239.35	\$3.54	137,353	\$484,427.68	\$3.53	229,377	\$803,081.09	\$3.50	229,377	\$695,343.75	\$3.03	229,377	\$649,931.46	\$2.83	28,918	\$66,548.99	\$2.30
	CONSTRUCTION COSTS & OWNER / DEVELOPMENT CONSTRUCTION RELATED COST SUBTOTAL:		108,229	\$40,847,130	\$377.41	137,353	\$51,645,032	\$376.00	229,377	\$85,650,029	\$373.40	229,377	\$74,144,759	\$323.24	229,377	\$69,295,181	\$302.10	28,918	\$7,091,267	\$245.22
	OWNER /DEVELOPMENT SOFT COSTS																			
7	Hazardous Materials Cost:		108,229	\$79,000	\$0.73	137,353	\$87,000	\$0.63	229,377	\$111,000	\$0.48	229,377	\$111,000	\$0.48	229,377	\$111,000	\$0.48	28,918	\$15,500	\$0.54
A	Pre-Construction Survey - Boiler Plant	\$ 7,500.00	1	\$7,500		1	\$7,500		1	\$7,500		1	\$7,500		1	\$7,500		0	\$0	
B	Other: Pre-Construction Survey - Renovation Areas	\$ 7,500.00	1	\$7,500		1	\$7,500		1	\$7,500		1	\$7,500		1	\$7,500		1	\$7,500	
C	Plan and Monitoring: Boiler Plant - None Anticipated	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
D	Other: Plan and Monitoring - Renovation Areas	\$ 3.00	8,000	\$24,000		9,000	\$27,000		12,000	\$36,000		12,000	\$36,000		12,000	\$36,000		1,000	\$3,000	
E	Abatement/Removal - Boiler Plant - Not Anticipated any Abatement	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
F	Other: Abatement/Removal - Renovation Area	\$ 5.00	8,000	\$40,000		9,000	\$45,000		12,000	\$60,000		12,000	\$60,000		12,000	\$60,000		1,000	\$5,000	
8	Pre-Design / Planning Costs:		108,229	\$237,118	\$2.19	137,353	\$264,113	\$1.92	229,377	\$349,125	\$1.52	229,377	\$320,362	\$1.40	229,377	\$308,238	\$1.34	28,918	\$17,728	\$0.61
A	Planning Fund Reimbursement	\$ 100,000.00	1	\$100,000		1	\$100,000		1	\$100,000		1	\$100,000		1	\$100,000		0	\$0	
B	Other:			\$0			\$0			\$0			\$0			\$0			\$0	

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

OWNER'S CONCEPTUAL COST OPINION - Rev. 2

Recap - Systems Format



30-May-14

		Option 1			Option 2			Option 3			Option 4			Option 5			Alternate 1			
		3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.			4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.			Infill two levels in current unexcavated area which match building 525 B Levels			
C	Programming	0.25%	1	\$102,117.82	1	\$129,112.58	1	\$214,125.07	1	\$185,361.90	1	\$173,237.95	1	\$17,728.17	1	\$17,728.17				
D	Other:			\$0		\$0		\$0		\$0		\$0		\$0		\$0				
E	Environmental Assessment	\$ 10,000.00	1	\$10,000	1	\$10,000	1	\$10,000	1	\$10,000	1	\$10,000	1	\$10,000	0	\$0				
F	Other:			\$0		\$0		\$0		\$0		\$0		\$0		\$0				
G	Geotechnical Investigation / Surveys	\$ 25,000.00	1	\$25,000	1	\$25,000	1	\$25,000	1	\$25,000	1	\$25,000	1	\$25,000	0	\$0				
H	Other:			\$0		\$0		\$0		\$0		\$0		\$0		\$0				
9	Design Costs:		108,229	\$2,781,889	\$25.70	137,353	\$3,508,434	\$25.54	229,377	\$5,796,517	\$25.27	229,377	\$5,022,138	\$21.89	229,377	\$4,695,730	\$20.47	28,918	\$477,063	\$16.50
A	A/E Design Fees - A/S/M/P/FP/E/C/L	6.50%	1	\$2,655,063	1	\$3,356,927	1	\$5,567,252	1	\$4,819,409	1	\$4,504,187	1	\$460,932	1	\$460,932				
B	Other:	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
C	Other:	\$ -	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0				
D	Other:	\$ -	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0				
E	Other:	\$ -	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0				
F	Other:	\$ -	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0				
G	Additional Printing Costs	\$ 15,000.00	1	\$15,000	1	\$15,000	1	\$15,000	1	\$15,000	1	\$15,000	1	\$15,000	0	\$0				
H	High Performance Design Fees	0.25%	1	\$91,825	1	\$116,507	1	\$194,265	1	\$167,729	1	\$156,544	1	\$16,131	1	\$16,131				
I	Value Management Related Costs	\$ 20,000.00	1	\$20,000	1	\$20,000	1	\$20,000	1	\$20,000	1	\$20,000	1	\$20,000	0	\$0				
J	Other:			\$0		\$0		\$0		\$0		\$0		\$0		\$0				
10	Property Acquisition:		108,229	\$0	\$0.00	137,353	\$0	\$0.00	229,377	\$0	\$0.00	229,377	\$0	\$0.00	229,377	\$0	\$0.00	28,918	\$0	\$0.00
A	Existing Ownership - Not Required	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
B	TBD	\$ -	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0				
C	TBD	\$ -	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0				
D	TBD	\$ -	0	\$0		\$0		\$0		\$0		\$0		\$0		\$0				
11	Furnishings, Fixtures & Equipment Costs:		108,229	\$7,692,215	\$71.07	137,353	\$9,594,740	\$69.85	229,377	\$15,143,787	\$66.02	229,377	\$16,993,470	\$74.09	229,377	\$9,594,740	\$41.83	28,918	\$2,325,007	\$80.40
A	Furnishings & Fixture Detail Subtotal:			\$2,783,640		\$3,366,120		\$4,746,480		\$6,586,960		\$3,366,120		\$1,012,130		\$1,012,130				
1	Mechanical / Back of House Functions	\$ 10.00	17,211	\$172,110	17,211	\$172,110	17,211	\$172,110	17,211	\$172,110	17,211	\$172,110	17,211	\$172,110	0	\$0				
2	General Office / Administration Use	\$ 35.00	62,313	\$2,180,955	62,313	\$2,180,955	62,313	\$2,180,955	154,337	\$5,401,795	62,313	\$2,180,955	28,918	\$1,012,130	28,918	\$1,012,130				
3	Clinical Use	\$ 15.00	28,705	\$430,575	28,705	\$430,575	120,729	\$1,810,935	28,705	\$430,575	28,705	\$430,575	0	\$0	0	\$0				
4	Outpatient Surgery Use	\$ 20.00	0	\$0	29,124	\$582,480	29,124	\$582,480	29,124	\$582,480	29,124	\$582,480	0	\$0	0	\$0				
5	Shell Space	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	92,024	\$0	0	\$0	0	\$0				
6	TBD	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
7	TBD	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
8	TBD	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
B	Equipment Detail Subtotal:			\$4,870,305	\$45.00	\$6,180,885	\$45.00	\$10,321,965	\$45.00	\$10,321,965	\$45.00	\$6,180,885	\$26.95	\$1,301,310	\$45.00	\$1,301,310				
1	Mechanical / Back of House Functions	\$ 45.00	17,211	\$774,495	17,211	\$774,495	17,211	\$774,495	17,211	\$774,495	17,211	\$774,495	0	\$0	0	\$0				
2	General Office / Administration Use	\$ 45.00	62,313	\$2,804,085	62,313	\$2,804,085	62,313	\$2,804,085	154,337	\$6,945,165	62,313	\$2,804,085	28,918	\$1,301,310	28,918	\$1,301,310				
3	Clinical Use	\$ 45.00	28,705	\$1,291,725	28,705	\$1,291,725	120,729	\$5,432,805	28,705	\$1,291,725	28,705	\$1,291,725	0	\$0	0	\$0				
4	Outpatient Surgery Use	\$ 45.00	0	\$0	29,124	\$1,310,580	29,124	\$1,310,580	29,124	\$1,310,580	29,124	\$1,310,580	0	\$0	0	\$0				
5	Shell Space	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	92,024	\$0	0	\$0	0	\$0				
6	TBD	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
C	FF&E Design Cost Subtotal:			\$38,270		\$47,735		\$75,342		\$84,545		\$47,735		\$11,567		\$11,567				
1	Interior FFE Design Fees & Consultation	0.50%	1	\$38,270	1	\$47,735	1	\$75,342	1	\$84,545	1	\$47,735	1	\$11,567	1	\$11,567				
2	TBD	\$ -	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
12	Information Technology Costs:		108,229	\$808,656	\$7.47	137,353	\$1,012,524	\$7.37	229,377	\$1,725,710	\$7.52	229,377	\$1,725,710	\$7.52	229,377	\$1,403,626	\$6.12	28,918	\$224,115	\$7.75
A	Mechanical / Back of House Functions	\$ 1.75	17,211	\$30,119	17,211	\$30,119	17,211	\$30,119	17,211	\$30,119	17,211	\$30,119	0	\$0	0	\$0				
B	General Office / Administration Use	\$ 3.50	62,313	\$218,096	62,313	\$218,096	62,313	\$218,096	154,337	\$540,180	62,313	\$218,096	28,918	\$101,213	28,918	\$101,213				
C	Clinical Use	\$ 3.50	28,705	\$100,468	28,705	\$100,468	120,729	\$422,552	28,705	\$100,468	28,705	\$100,468	0	\$0	0	\$0				
D	Outpatient Surgery Use	\$ 2.75	0	\$0	29,124	\$80,091	29,124	\$80,091	29,124	\$80,091	29,124	\$80,091	0	\$0	0	\$0				
E	U of U Campus Security - Allowance	\$ 4.25	108,229	\$459,973	137,353	\$583,750	229,377	\$974,852	229,377	\$974,852	229,377	\$974,852	28,918	\$122,902	28,918	\$122,902				
13	Utah Art Costs:	1.00%	108,229	\$367,302	\$3.39	137,353	\$466,027	\$3.39	229,377	\$777,060	\$3.39	229,377	\$670,915	\$2.92	229,377	\$626,174	\$2.73	28,918	\$64,524	\$2.23
14	Testing & Inspection Costs:		108,229	\$714,825	\$6.60	137,353	\$903,788	\$6.58	229,377	\$1,498,876	\$6.53	229,377	\$1,297,533	\$5.66	229,377	\$1,212,666	\$5.29	28,918	\$124,097	\$4.29
A	Building Code Inspection	0.75%	1	\$306,353	1	\$387,338	1	\$642,375	1	\$556,086	1	\$519,714	1	\$53,184	1	\$53,184				
B	Other Building Code Inspection -	0.00%	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
C	Material Testing	0.65%	1	\$265,506	1	\$335,693	1	\$556,725	1	\$481,941	1	\$450,419	1	\$46,093	1	\$46,093				
D	Other Material Testing Costs -	0.00%	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				

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		Option 1			Option 2			Option 3			Option 4			Option 5			Alternate 1			
		3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.			4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.			7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.			Infill two levels in current unexcavated area which match building 525 B Levels			
E	Special Inspections	0.35%	1	\$142,965	1	\$180,758	1	\$299,775	1	\$259,507	1	\$242,533	1	\$24,819	1	\$24,819				
F	Other Special Inspection Costs -	0.00%	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
G	Other:	0.00%	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0				
15	Contingency	4.58%	108,229	\$1,870,799	\$17.29	137,353	\$2,365,342	\$17.22	229,377	\$3,922,771	\$17.10	229,377	\$3,395,830	\$14.80	229,377	\$3,173,719	\$13.84	28,918	\$324,780	\$11.23
16	Moving / Occupancy Costs: Allowance		108,229	\$95,318	\$0.88	137,353	\$117,161	\$0.85	229,377	\$195,381	\$0.85	229,377	\$209,185	\$0.91	229,377	\$117,161	\$0.51	28,918	\$28,918	\$1.00
A	Mechanical / Back of House Functions	\$ 0.50	17,211	\$8,606		17,211	\$8,606		17,211	\$8,606		17,211	\$8,606		17,211	\$8,606		0	\$0	
B	General Office / Administration Use	\$ 1.00	62,313	\$62,313		62,313	\$62,313		62,313	\$62,313		154,337	\$154,337		62,313	\$62,313		28,918	\$28,918	
C	Clinical Use	\$ 0.85	28,705	\$24,399		28,705	\$24,399		120,729	\$102,620		28,705	\$24,399		28,705	\$24,399		0	\$0	
D	Outpatient Surgery Use	\$ 0.75	0	\$0		29,124	\$21,843		29,124	\$21,843		29,124	\$21,843		29,124	\$21,843		0	\$0	
E	Shell Space	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		92,024	\$0		0	\$0	
17	Builder's Risk Insurance (0.15% of Construction Budget)	0.15%	108,229	\$61,271	\$0.57	137,353	\$77,468	\$0.56	229,377	\$128,475	\$0.56	229,377	\$111,217	\$0.48	229,377	\$103,943	\$0.45	28,918	\$10,637	\$0.37
18	Legal Services (0.1% of Construction Budget)	0.10%	108,229	\$40,847	\$0.38	137,353	\$51,645	\$0.38	229,377	\$85,650	\$0.37	229,377	\$74,145	\$0.32	229,377	\$69,295	\$0.30	28,918	\$7,091	\$0.25
19	DFCM Management Costs:		108,229	\$86,144	\$0.80	137,353	\$100,721	\$0.73	229,377	\$146,628	\$0.64	229,377	\$131,095	\$0.57	229,377	\$124,548	\$0.54	28,918	\$40,573	\$1.40
A	DFCM Project Management Oversight	\$ 0.00135	1	\$55,144		1	\$69,721		1	\$115,628		1	\$100,095		1	\$93,548		1	\$9,573	
B	DFCM Administrative Staff	\$ 31,000.00	1	\$31,000		1	\$31,000		1	\$31,000		1	\$31,000		1	\$31,000		1	\$31,000	
20	User Fees:		108,229	\$175,000	\$1.62	137,353	\$175,000	\$1.27	229,377	\$175,000	\$0.76	229,377	\$175,000	\$0.76	229,377	\$175,000	\$0.76	28,918	\$0	\$0.00
A	PM Fee based on U of U Policy	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
B	Fee for "nonstate funding" as defined in the U of U policy - Assume \$30M to be Non-State Funding	\$ 175,000.00	1	\$175,000		1	\$175,000		1	\$175,000		1	\$175,000		1	\$175,000		0	\$0	
C	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
D	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
21	Commissioning Costs:		108,229	\$310,617	\$2.87	137,353	\$394,203	\$2.87	229,377	\$658,312	\$2.87	229,377	\$658,312	\$2.87	229,377	\$658,312	\$2.87	28,918	\$82,995	\$2.87
A	Third-Party Commissioning Verification	\$ 2.75	108,229	\$297,630		137,353	\$377,721		229,377	\$630,787		229,377	\$630,787		229,377	\$630,787		28,918	\$79,525	
B	Commissioning Utility Costs	\$ 0.12	108,229	\$12,987		137,353	\$16,482		229,377	\$27,525		229,377	\$27,525		229,377	\$27,525		28,918	\$3,470	
C	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
D	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
22	Other Costs:		108,229	\$210,000	\$1.94	137,353	\$210,000	\$1.53	229,377	\$210,000	\$0.92	229,377	\$210,000	\$0.92	229,377	\$210,000	\$0.92	28,918	\$0	\$0.00
A	Energy Study	\$ 10,000.00	1	\$10,000		1	\$10,000		1	\$10,000		1	\$10,000		1	\$10,000		0	\$0	
B	Integrated Modeling -Allowance of \$200,000	\$ 200,000.00	1	\$200,000		1	\$200,000		1	\$200,000		1	\$200,000		1	\$200,000		0	\$0	
C	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
D	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
E	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
F	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
G	TBD	\$ -	0	\$0		0	\$0		0	\$0		0	\$0		0	\$0		0	\$0	
	OWNER / DEVELOPMENT SOFT COST		108,229	\$13,941,322	\$128.81	137,353	\$17,318,137	\$126.08	229,377	\$27,590,477	\$120.28	229,377	\$28,220,064	\$123.03	229,377	\$19,887,126	\$86.70	28,918	\$3,467,069	\$119.89
	PROJECT COST TOTAL:		108,229	\$54,788,451	\$506.23	137,353	\$68,963,170	\$502.09	229,377	\$113,240,506	\$493.69	229,377	\$102,364,823	\$446.27	229,377	\$89,182,307	\$388.80	28,918	\$10,558,335	\$365.11
	PROJECT FUNDING SOURCES:			Funding Amount			Funding Amount			Funding Amount			Funding Amount			Funding Amount			Funding Amount	
1	Previous Funding:			\$0			\$0			\$0			\$0			\$0			\$0	
A	TBD																			
B	TBD																			
C	TBD																			
D	TBD																			
2	Other Funding Sources:			\$0			\$0			\$0			\$0			\$0			\$0	
A	TBD																			
B	TBD																			
C	TBD																			
D	TBD																			
	Outstanding Funding Requirement:			(\$54,788,451)			(\$68,963,170)			(\$113,240,506)			(\$102,364,823)			(\$89,182,307)			(\$10,558,335)	

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

OWNER'S CONCEPTUAL COST OPINION - Rev. 2

Recap - Systems Format



30-May-14

	Option 1	Option 2	Option 3	Option 4	Option 5	Alternate 1
	3-story building (levels A,1, &2) along with basement mechanical space with general use on levels A and 2; and clinical space on level 1.	4-story building (levels A, 1, 2, 3) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; and outpatient surgery on level 3.	7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1, 4, 5, & 6; and outpatient surgery on level 3.	7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; office space on levels 4, 5, & 6; and outpatient surgery on level 3.	7-story building (levels A, 1, 2, 3, 4, 5, 6,) along with basement mechanical space with general use space on levels A and 2; clinical use on level 1; shell space on levels 4, 5, & 6; and outpatient surgery on level 3.	Infill two levels in current unexcavated area which match building 525 B Levels
Project Information						
Facility Gross Square Feet	108,229	137,353	229,377	229,377	229,377	28,918
Facility Net Square Feet						
Facility Net/Gross Ratio	0%	0%	0%	0%	0%	0%
Base Cost Date:	1-Jun-14					
Estimated Bid Date:	1-Jan-16					
Estimated Completion Date:	1-Jan-18					
Last Modified Date:	30-May-14					
Print Date:	30-May-14					



UNIVERSITY OF UTAH
Ambulatory and Administrative Building Study
CONCEPTUAL COST OPINION

Cost Opinion by Jacobsen Advisory Services

Cost Opinion Preparation Date: **20-Mar-13**

		Cost Range					Estimate Assumptions:				
A.	Unit Cost for Phased Demolition of Existing Structure	Unit of Measure	Low	High	Premium; State of Art Program	Comments					
	A JCC Historical	sf	\$ 5.85	\$ 7.15	No additional cost	Constrained Site Access; adjoining facilities; moderately difficult; concrete frame; phased demo;					1) Includes no site work i.e. mass earth work, shoring, landscaping, paving, retaining wall, etc
	B Means	sf	\$ 5.72	\$ 7.50	No additional cost	single building in urban setting					2) Includes no off-site utilities or utilities extensions
	C Grant McKay Input	sf	\$ 5.50	\$ 7.00	No additional cost	Constrained Site Access; adjoining facilities; moderately difficult; concrete frame					3) Reasonable programming requirements
	D JAS Cost Opinion	sf	\$ 5.69	\$ 7.22	No additional cost						4)
											5)
											6)
	USE		\$ 6.46	/sf							

		Cost Range					Estimate Assumptions:				
B.	Unit Cost for New Office / Classroom Facility	Unit of Measure	Low	High	Premium; State of Art Program	Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
	A JCC Historical	sf	\$ 179.85	\$180.85	NA	Based on Dixie Centennial & Warnock Engineering; adjust for upgrade Exterior Skin	Substructure	\$ 2.66	\$ 4.66	\$ 4.89	Premium: 16 flr to flr
	B Means	sf	\$ 177.85	\$185.85	NA	150,000 sf facility; adjust for upgrade Exterior Skin	Superstructure	\$ 21.31	\$ 23.98	\$ 25.18	Premium: 16 flr to flr
	C JAS Cost Opinion	sf	\$ 158.40	\$197.24	\$ 230.40	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 39.60	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 16 ft flr to flr
							Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
							Interiors	\$ 24.33	\$ 33.50	\$ 40.20	
							Conveying	\$ 2.25	\$ 2.85	\$ 2.99	Assume geared elevators at 1/50KSF;
							Plumbing	\$ 12.08	\$ 15.60	\$ 16.38	
							HVAC	\$ 18.20	\$ 23.50	\$ 24.68	\$ 39.00 VB - includes plumbing
							Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	\$ 2.50 VB
							Electrical	\$ 19.04	\$ 24.05	\$ 25.25	\$ 16.00 Spectrum plus electrical yard upgrade
							GC/Fees/Contingency - 25%	\$ 31.68	\$ 39.45	\$ 46.08	
							Total	\$ 158.40	\$ 197.24	\$ 230.40	
	Average of Unit Costs		\$ 187.21	/sf							
	USE		\$ 230.40	/sf							

		Cost Range					Estimate Assumptions:				
C.	Unit Cost for Renovation for Office/Classroom Functions	Unit of Measure	Low	High	Premium; State of Art Program	Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
	A JCC Historical	sf	\$ 183.85	\$194.70	NA	College of Nursing Renovation incl seismic & rehab exterior skin; adjust for new skin; adjust for upgrade Ext skin	Substructure / Demolition	\$ 3.00	\$ 4.00	\$ 4.20	Assume demo of ext closure, roofing, & interiors; 'gut' & rebuild; Premium - Additional loading capacity
	B Means	sf	\$ 163.19	\$167.21	NA	Modified by eliminating substructure, superstructure; add demo; adjust for upgrade Exterior Skin	Superstructure	\$ 12.00	\$ 16.00	\$ 16.80	Assume Seismic upgrade of structure; Premium - Additional loading capacity
	C JAS Cost Opinion	sf	\$ 147.19	\$186.44	\$ 212.87	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 34.65	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin ; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 14 ft flr to flr
							Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
							Interiors	\$ 24.33	\$ 33.50	\$ 40.20	Assume all new systems
							Conveying	\$ 2.25	\$ 2.85	\$ 2.99	Assume geared elevators at 1/50KSF; assume new
							Plumbing	\$ 12.08	\$ 15.60	\$ 16.38	Assume all new systems
							HVAC	\$ 18.20	\$ 23.50	\$ 24.68	Assume all new systems
							Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	Assume all new systems
							Electrical	\$ 19.04	\$ 24.05	\$ 25.25	Assume all new systems
							GC/Fees/Contingency - 25%	\$ 29.44	\$ 37.29	\$ 42.57	
							Total	\$ 147.19	\$ 186.44	\$ 212.87	
	Average of Unit Costs		\$ 179.35	/sf							
	USE		\$ 212.87	/sf							



UNIVERSITY OF UTAH
Ambulatory and Administrative Building Study
CONCEPTUAL COST OPINION

Cost Opinion by Jacobsen Advisory Services
 Cost Opinion Preparation Date: **20-Mar-13**

D1. Unit Cost for New Clinical Type Building - 'B' Occupancy	Unit of Measure	Cost Range			Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
		Low	High	Premium; State of Art Program						
A JCC Historical	sf	\$ 257.85	\$280.85	NA	PCMC ACC / DRMCOP;	Substructure	\$ 4.00	\$ 4.66	\$ 4.89	Premium: 16 flr to flr
B Means	sf	\$ 248.85	\$265.85	NA		Superstructure	\$ 21.31	\$ 23.98	\$ 25.18	Premium: 16 flr to flr
C JAS Cost Opinion	sf	\$ 219.95	\$260.06	\$ 299.08	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 39.60	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 16 ft flr to flr
Average of Unit Costs		\$ 261.79	/sf			Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
USE		\$ 299.08	/sf			Interiors	\$ 42.00	\$ 48.00	\$ 57.60	
						Conveying	\$ 2.75	\$ 3.50	\$ 3.68	Assume geared elevators at 1/40KSF;
						Plumbing	\$ 14.50	\$ 18.00	\$ 18.90	
						HVAC	\$ 25.50	\$ 35.00	\$ 36.75	\$ 42.00 VB in plumbing
						Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	\$ 2.50 VB
						Electrical	\$ 24.25	\$ 28.86	\$ 30.30	\$ 25.00 Spectrum
						Special systems	\$ 18.50	\$ 20.50	\$ 21.53	Medical gases, Patient Wall Systems, etc
						GC/Fees/Contingency - 25%	\$ 40.29	\$ 47.91	\$ 55.51	
						Total	\$ 219.95	\$ 260.06	\$ 299.08	

D2. Unit Cost for New Clinical Type Building - 'I' Occupancy	Unit of Measure	Cost Range			Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
		Low	High	Premium; State of Art Program						
A JCC Historical	sf	\$ 259.62	\$282.86	NA	PCMC ACC / DRMCOP; adjust for upgrade Exterior Skin; adjust for structural upgrade for I occupancy	Substructure	\$ 4.28	\$ 4.99	\$ 5.24	Lateral system upgrade of 20% for I occupancy: Premium - 16 ft flr to flr
B Means	sf	\$ 250.62	\$267.86	NA	Adjust for upgrade Exterior Skin; adjust for structural upgrade for I occupancy	Superstructure	\$ 22.80	\$ 25.66	\$ 26.94	Lateral system upgrade of 20% for I occupancy: Premium - 16 ft flr to flr
C JAS Cost Opinion	sf	\$ 222.16	\$262.57	\$ 301.71	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 39.60	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 16 ft flr to flr
Average of Unit Costs		\$ 263.92	/sf			Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
USE		\$ 301.71	/sf			Interiors	\$ 42.00	\$ 48.00	\$ 57.60	
						Conveying	\$ 2.75	\$ 3.50	\$ 3.68	Assume geared elevators at 1/40KSF;
						Plumbing	\$ 14.50	\$ 18.00	\$ 18.90	
						HVAC	\$ 25.50	\$ 35.00	\$ 36.75	\$ 42.00 VB incl plumbing
						Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	\$ 2.50 VB
						Electrical	\$ 24.25	\$ 28.86	\$ 30.30	\$ 25.00 Spectrum
						Special systems	\$ 18.50	\$ 20.50	\$ 21.53	Medical gases, Patient Wall Systems, etc
						GC/Fees/Contingency - 25%	\$ 40.73	\$ 48.41	\$ 56.04	
						Total	\$ 222.16	\$ 262.57	\$ 301.71	



UNIVERSITY OF UTAH
Ambulatory and Administrative Building Study
CONCEPTUAL COST OPINION

Cost Opinion by Jacobsen Advisory Services
 Cost Opinion Preparation Date: 20-Mar-13

E1. Unit Cost for Renovation for Clinical Type Use - 'B' Occupancy	Unit of Measure	Cost Range			Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
		Low	High	Premium; State of Art Program						
A JCC Historical	sf	\$ 200.95	\$277.85	NA	MICU / Burn Unit ;	Substructure / Demolition	\$ 3.00	\$ 4.00	\$ 4.20	Assume demo of ext closure, roofing, & interiors; 'gut' & rebuild
B Means	sf	\$ 197.95	\$270.85	NA	adjust for upgrade Exterior Skin; Mech constraints	Superstructure	\$ 12.00	\$ 16.00	\$ 16.80	Assume Seismic upgrade of structure;
C JAS Cost Opinion	sf	\$ 218.06	\$263.14	\$ 290.74	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 34.65	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin ; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 14 ft flr to flr
Average of Unit Costs		\$ 245.65	/sf			Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
USE		\$ 290.74	/sf			Interiors	\$ 42.00	\$ 48.00	\$ 57.60	
						Conveying	\$ 2.75	\$ 3.50	\$ 3.68	Assume geared elevators at 1/40KSF;
						Plumbing	\$ 14.50	\$ 18.00	\$ 18.90	
						HVAC	\$ 30.60	\$ 42.00	\$ 44.10	\$ 50.40 VB incl plumbing; 20% increase to HVAC due to flr to flr constraints
						Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	\$ 2.50 VB
						Electrical	\$ 24.25	\$ 28.86	\$ 30.30	\$ 25.00 Spectrum plus \$100K upgrade to electrical yard
						Special systems	\$ 18.50	\$ 20.50	\$ 21.53	Medical gases, Patient Wall Systems, etc
						GC/Fees/Contingency - 25%	\$ 43.61	\$ 52.63	\$ 53.84	
						Total	\$ 218.06	\$ 263.14	\$ 290.74	

E2. Unit Cost for Renovation for Clinical Type Use - 'I' Occupancy w low flr to flr heights	Unit of Measure	Cost Range			Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
		Low	High	Premium; State of Art Program						
A JCC Historical	sf	\$ 202.00	\$279.25	NA	MICU / Burn Unit ; adjust for upgrade Exterior Skin; adjust for structural upgrade for I occupancy	Substructure / Demolition	\$ 3.21	\$ 4.28	\$ 4.49	Assume demo of ext closure, roofing, & interiors; 'gut' & rebuild
B Means	sf	\$ 199.00	\$272.25	NA	adjust for upgrade Exterior Skin; adjust for structural upgrade for I occupancy	Superstructure	\$ 12.84	\$ 17.12	\$ 17.98	Assume Seismic upgrade of structure;
C JAS Cost Opinion	sf	\$ 219.38	\$264.89	\$ 292.58	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 34.65	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin ; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 14 ft flr to flr
Average of Unit Costs		\$ 247.05	/sf			Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
USE		\$ 292.58	/sf			Interiors	\$ 42.00	\$ 48.00	\$ 57.60	
						Conveying	\$ 2.75	\$ 3.50	\$ 3.68	Assume geared elevators at 1/40KSF;
						Plumbing	\$ 14.50	\$ 18.00	\$ 18.90	
						HVAC	\$ 30.60	\$ 42.00	\$ 44.10	\$ 42.00 VB incl plumbing; 20% increase to HVAC due to flr to flr constraints
						Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	\$ 2.50 VB
						Electrical	\$ 24.25	\$ 28.86	\$ 30.30	\$ 25.00 Spectrum plus \$100K upgrade to electrical yard
						Special systems	\$ 18.50	\$ 20.50	\$ 21.53	Medical gases, Patient Wall Systems, etc
						GC/Fees/Contingency - 25%	\$ 43.88	\$ 52.98	\$ 54.21	
						Total	\$ 219.38	\$ 264.89	\$ 292.58	



UNIVERSITY OF UTAH
Ambulatory and Administrative Building Study
CONCEPTUAL COST OPINION

Cost Opinion by Jacobsen Advisory Services

Cost Opinion Preparation Date: **20-Mar-13**

F. Unit Cost for New Laboratory Type Building	Unit of Measure	Cost Range			Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
		Low	High	Premium; State of Art Program						
A JCC Historical	sf	\$ 350.00	\$400.00	NA	School of Pharmacy	Substructure	\$ 4.00	\$ 4.66	\$ 4.89	
B Means	sf	\$ -	\$ -	NA	Not Applicable	Superstructure	\$ 21.31	\$ 23.98	\$ 25.18	
C JAS Cost Opinion	sf	\$ 282.39	\$331.43	\$ 362.76	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 39.60	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 16 ft flr to flr
Average of Unit Costs		\$ 345.32	/sf			Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
USE		\$ 362.76	/sf			Interiors	\$ 29.50	\$ 37.00	\$ 44.40	
						Conveying	\$ 2.25	\$ 2.85	\$ 2.99	Assume geared elevators at 1/50KSF; assume new
						Plumbing	\$ -	\$ -	\$ -	Incl w HVAC
						HVAC	\$ 85.00	\$ 95.00	\$ 99.75	?? VB
						Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	?? VB
						Electrical	\$ 32.00	\$ 37.00	\$ 38.85	?? Spectrum
						Special systems	\$ 25.00	\$ 35.00	\$ 36.75	Cabinets, fume hoods,
						GC/Fees/Contingency - 25%	\$ 56.48	\$ 66.29	\$ 65.20	
						Total	\$ 282.39	\$ 331.43	\$ 362.76	

G. Unit Cost for Renovation of space for Laboratory type Functions	Unit of Measure	Cost Range			Comments	JAS Cost Opinion	Low	High	Premium; State of Art Program	Comments
		Low	High	Premium; State of Art Program						
A JCC Historical	sf	\$ 250.00	\$300.00	NA		Substructure / Demolition	\$ 3.00	\$ 4.00	\$ 4.20	Assume demo of ext closure, roofing, & interiors; 'gut' & rebuild
B Means	sf	\$ -	\$ -	NA	Not Applicable	Superstructure	\$ 12.00	\$ 16.00	\$ 16.80	Assume Seismic upgrade of structure;
C JAS Cost Opinion	sf	\$ 290.75	\$344.38	\$ 370.17	See breakdown	Exterior Closure	\$ 23.60	\$ 24.75	\$ 34.65	Low/High: Using \$75 to 85/sf - Upgrade of Exterior Skin ; .0225lf/sf ratio; 14ft flr to flr; Premium: Using \$110/sf; .0225lf/sf; 14 ft flr to flr
Average of Unit Costs		\$ 311.06	/sf			Roofing	\$ 1.00	\$ 1.50	\$ 1.58	assume 5 story;
USE		\$ 370.17	/sf			Interiors	\$ 29.50	\$ 37.00	\$ 44.40	
						Conveying	\$ 2.25	\$ 2.85	\$ 2.99	Assume geared elevators at 1/50KSF; assume new
						Plumbing	\$ -	\$ -	\$ -	Incl w HVAC
						HVAC	\$ 102.00	\$ 114.00	\$ 119.70	?? VB Increase due to flr to flr constraints
						Fire Protection	\$ 2.25	\$ 3.40	\$ 3.57	?? VB
						Electrical	\$ 32.00	\$ 37.00	\$ 38.85	?? Spectrum
						Special systems	\$ 25.00	\$ 35.00	\$ 36.75	Cabinets, fume hoods,
						GC/Fees/Contingency - 25%	\$ 58.15	\$ 68.88	\$ 66.68	
						Total	\$ 290.75	\$ 344.38	\$ 370.17	

H. Unit Cost for Below Grade Parking Structure - Below Building	Unit of Measure	Cost Range			Comments
		Low	High	Premium; State of Art Program	
A JCC Historical	stall	\$ 34,100	\$42,500	NA	incl shoring four sides; four levels w/ transfer slab
B Means	stall	\$ 28,560	\$35,100	NA	Open cut; good configuration; two levels
C JAS Cost Opinion	stall	\$ 30,000	\$42,500	NA	with shoring and multiple levels and good configuration
USE	stall	\$ 35,460			
	sf	\$ 98.50			assuming 360 sf/stall

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

CONCEPTUAL COST OPINION - Rev. 4

Recap - Systems Format



8-Dec-14

Case Study 1a
6-story building (levels A, 1, 2, 3, 4, & 5) along with two-story basement mechanical space with two levels of general (Demand Use) use on levels BL and BU; Provide Clinical Space on Levels 1 & 2, Out-patient Surgery on Level 3, and Office Space on Levels 4 & 5.

SYSTEM	SYSTEM DESCRIPTION	BUILDING SF	COST	BLDG. COST/SF
BUILDING COSTS				
Unit Costs				
1	Footings & Foundation	227,801	\$1,982,818	\$8.70
	Building Frame - Conventional Spread Footing System - sf	227,801	\$1,195,955	
	Building Frame - Foundation Walls - vsf	18,250	\$661,563	
	Building Frame - Imported Compacted Engineer Fill - cy	4,978	\$89,600	
	Landscape Plaza Areas - Upgrade to Conventional Spread Footing System - sf	6,800	\$35,700	
2	Structure	227,801	\$7,147,034	\$31.37
	Building Frame - sf	227,801	\$6,875,034	
	Landscape Plaza Areas - sf	6,800	\$272,000	
3	Exterior Closure	227,801	\$7,410,227	\$32.53
	Below Grade - Dampproofing / Waterproofing	20,748	\$165,984	
	Above Grade - vsf	62,857	\$6,914,243	
	Roof Parapets	3,000	\$330,000	
4	Roofing	227,801	\$373,469	\$1.64
	Roofing System - sf	33,189	\$275,469	
	Roofing Parapets - sf	3,000	\$30,000	
	Landscape Plaza Waterproofing System - sf	6,800	\$68,000	
5	Interior Finishes	227,801	\$11,200,856	\$49.17
	Mechanical / Back-of-house Space - sf	17,887	\$536,610	
	Shell Space - sf	0	\$0	
	General / Office / Administration Use - sf	122,961	\$5,190,184	
	Clinical Use - Type 'B' - sf	57,829	\$3,497,498	
	Out-patient Surgery - sf	29,124	\$1,776,564	
	Interior Open Space	4,000	\$80,000	
	Patch & Repair Penetration Areas into Existing	8	\$120,000	
		0	\$0	
6	Conveying Systems - One per 40,000 sf	227,801	\$960,000	\$4.21
	G geared Elevators - per Elevator	6	\$900,000	
	Elevator Cab Finishes - per cab	6	\$60,000	
7	Special Systems / Equipment	227,801	\$1,965,138	\$8.63
	Clinical Use - Type 'B' - sf	57,829	\$1,306,935	
	Laboratory Space - sf	0	\$0	
	Out-Patient Surgery Space - sf	29,124	\$658,202	
8	Mechanical	227,801	\$11,732,306	\$51.50
	Plumbing - Mechanical / Back-of-house Space - sf	17,887	\$134,153	
	Plumbing - Shell Space - sf	0	\$0	
	Plumbing - General / Office / Administration Use - sf	122,961	\$2,114,929	
	Plumbing - Clinical Use - Type 'B' - sf	57,829	\$1,147,906	
	Plumbing - Out-patient Surgery - sf	29,124	\$578,111	
	Plumbing - Interior Open Space - sf	4,000	\$30,000	
	HVAC - Mechanical / Back-of-house Space - sf	17,887	\$357,740	
	HVAC - Shell Space - sf	0	\$0	
	HVAC - General / Office / Administration Use - sf	122,961	\$3,185,920	
	HVAC - Clinical Use - Type 'B' - sf	57,829	\$2,231,043	
	HVAC - Out-patient Surgery - sf	29,124	\$1,123,604	
		0		
	Fire Protection - Mechanical / Back-of-house Space - sf	17,887	\$63,857	
	Fire Protection - Shell Space - sf	0	\$0	
	Fire Protection - General / Office / Administration Use - sf	122,961	\$438,971	
	Fire Protection - Clinical Use - Type 'B' - sf	57,829	\$216,859	
	Fire Protection - Out-patient Surgery - sf	29,124	\$109,215	

U of U - Ambulatory Administrative Building

Feasibility Floor Plan Study

CONCEPTUAL COST OPINION - Rev. 4

Recap - Systems Format



8-Dec-14

Case Study 1a
6-story building (levels A, 1, 2, 3, 4, & 5) along with two-story basement mechanical space with two levels of general (Demand Use) use on levels BL and BU; Provide Clinical Space on Levels 1 & 2, Out-patient Surgery on Level 3, and Office Space on Levels 4 & 5.

SYSTEM	SYSTEM DESCRIPTION	BUILDING SF	COST	BLDG. COST/SF
BUILDING COSTS				
Unit Costs				
9	Electrical	227,801	\$6,464,281	\$28.38
	Electrical - Mechanical / Back-of-house Space	17,887	\$357,740	
	Electrical - Shell Space	0	\$0	
	Electrical - General / Office / Administration Use	122,961	\$3,259,696	
	Electrical - Clinical Use - Type 'B'	57,829	\$1,840,119	
	Electrical - Out-patient Surgery	29,124	\$926,726	
	Electrical - Open Space	4,000	\$80,000	
10	Miscellaneous Items	227,801	\$3,692,710	\$16.21
	Congested Site Premium	1	\$3,692,710	
	BUILDING SUBTOTAL:	227,801	\$52,928,837	\$232.35
SITework COSTS				
11	On-Site Sitework Improvements	227,801	\$5,347,864	\$23.48
	Demolition / Shoring / Excavation			
	Demolition - Site	66,400	\$166,000	
	Demolition - Building	3,012	\$60,240	
	Demolition - Existing Tower Crane Footing	150	\$3,750	
	Demolition - Existing Earth Shoring Wall - vsf	3,190	\$31,900	
	Temporary Vertical Earth Shoring	12,720	\$636,000	
	Mass Excavation - Building Pad Area	37,341	\$298,731	
	Mass Excavation - Building Pad Haul-off	37,341	\$522,779	
	Backfill - Building Pad	5,808	\$104,544	
	Mass Excavation - West Slope Area	5,926	\$59,259	
	Mass Excavation - West Slope Haul-off	5,926	\$82,963	
	Backfill - West Slope Reconstruction	5,926	\$106,667	
	Mass Excavation - Temporary Ramp	2,800	\$28,000	
	Mass Excavation - Temporary Ramp Haul-off	2,800	\$39,200	
	Mass Backfill - Temporary Ramp Import & Backfill	2,800	\$61,600	
	West Slope Vertical Retaining Structures - sf	8,000	\$520,000	
	West Slope Pedestrian Walkways - sf	8,000	\$52,000	
	West Slope Pedestrian Stairs - lf	842	\$12,632	
	Suspended Pedestrian Corridor - South & West Sides of Building	7,700	\$358,050	
	Landscaping - Site	20,000	\$200,000	
	Landscaping - Courtyards	6,800	\$170,000	
	Site Paving	10,000	\$70,000	
	Site Utility - 12" HTW Relocation - Supply and Return - lf	500	\$250,000	
	Site Utility - Bldg 522 Grease Trap Relocation - ea	1	\$12,500	
	Site Utility - Bldg 522 Sanitary Sewer Line Relocation - lf	250	\$16,250	
	Site Utility - Reroute 10" sewer line -20' Deep - lf	325	\$27,625	
	Site Utility - Reroute 16" Water Line - lf	500	\$47,500	
	Site Utility - Reroute bldg 522 Storm Drain & Footing Drain - lf	350	\$22,750	
	Site Utility - Reroute 12" Storm Drain Line through building	265	\$18,550	
	Site Utility - Reconfigure HPS Line - Supply and Condensate - lf	275	\$37,125	
	Site Utility - Reconfigure NG line - lf	275	\$13,750	
	Site Utility - Relocation of 20,000 gal Fuel Oil Tank - ea	1	\$40,000	
	Site Utility - New Electrical Vaults - ea	2	\$70,000	
	Site Utility - New Communication Vault - ea	1	\$35,000	
	Site Utility - Reroute Electric Power to Bldg to 522-lf	200	\$30,000	
	Site Utility - Reroute Electric Power to West Parking Terrace - lf	150	\$11,250	
	Site Utility - Reroute Electric Power to West - toward Morain Eye - lf	500	\$47,500	

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Feasibility Floor Plan Study

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SYSTEM	SYSTEM DESCRIPTION	BUILDING SF	COST	BLDG. COST/SF
BUILDING COSTS				
Unit Costs				
	Site Utility - Construct Utility Tunnel for Wet Utilities and Electrical & Communication Bypass - lf	415	\$394,250	
	Site Utility - Reroute Communication Lines - lf	250	\$75,000	
	Site Utility - Reroute 6" Fire Water Line - lf	200	\$17,000	
	Site Utilities - Misc Other	1	\$150,000	
	Boiler Relocation Costs - ea	2	\$350,000	
	Site Utilities - Substation Dual Feed Pad Mounted Switch Gear	1	\$80,000	
	Site Utility - Relocate existing substation electrical conduits - empty	500	\$17,500	
			\$0	
12	Off - Site Improvements	227,801	\$435,000	\$1.91
	Site Utility - Electrical Cabling from Red Butte Substation	4,300	\$322,500	
	Site Utility - Electrical Cabling from Medical Center Substation	1,500	\$112,500	
	SITework SUBTOTAL:	227,801	\$5,782,864	\$25.39
ADMINISTRATION & FEES				
13	General Conditions	23%	\$13,210,133	\$57.99
14	Testing / Inspections		By Owner	\$0.00
15	Allowances		By Owner	\$0.00
16	Permits / Fees / Bonds etc.	Incl in GC	Included in GCs above	\$0.00
17	A/E Reimbursable / Fees		By Owner	\$0.00
18	Contingency	Incl in GC	Included in GCs above	\$0.00
	ADMINISTRATION & FEES SUBTOTAL:	227,801	\$13,210,133	\$57.99
	CONSTRUCTION COST TOTAL:	227,801	\$71,921,833	\$315.72

Floor Level Description	Floor Area - sf	Perimeter - lf	Fir to Fir - ft
Level - BL - Mechanical / Back of House - Alt is Office / General Use	31,670	728	14.25
Level - BU - two-story Mechanical / 'Demand Space'	14,459	728	14.25
Level - A - General Use / Administration	33,189	750	14.25
Level - 1 - Clinical	28,705	750	14.25
Level - 2 - Clinical / General Use / Administration	29,124	712	14.25
Level - 3 - Outpatient Surgery	29,124	713	14.25
Level - 4 - Clinical or Office or Shell	29,830	733	14.25
Level - 5 - Clinical or Office or Shell	31,700	753	14.25
Level - 6 - Clinical or Office or Shell			
Total	227,801	5,867	114

Roof Information - Minimum

Floor Area - sf	Perimeter - lf	Fir to Fir - ft
33,189	750	4
5,600		
1,200		
-		

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SYSTEM	OWNER / DEVELOPMENT CONSTRUCTION RELATED COSTS	Unit Cost	Quantity	Cost	Cost / Bldg SF
1	Utility Fee Costs		227,801	\$73,196	\$ 0.32
A	Water Connection / Upgrade Use Fee - Assume 3" Meter	\$ 27,661.06	1	\$27,661	
B	Sanitary Sewer Connection / Upgrade Use Fee	\$ 27.00	1,140	\$30,780	
C	Electrical Connection / Upgrade Use Fee - Allowance	\$ 10,000.00	1	\$10,000	
D	Storm Water Connection / Upgrade Use Fee - acre	\$ 1,585.00	3	\$4,755	
E	Fire Impact Fee - Not Applicable to U of U Projects	\$ -	227,801	\$0	
F	Police Impact Fee - Not Applicable to U of U Projects	\$ -	227,801	\$0	
G	Roadway Impact Fee - Not Applicable to U of U Projects	\$ -	227,801	\$0	
2	Additional Construction Costs Details:		227,801	\$935,000	\$ 4.10
A	Renovation of Existing Building Floor at Connection - Level BL - One location	\$ 85.00	1,000	\$85,000	
B	Renovation of Existing Building Floor at Connection - Level A - 2 locations	\$ 85.00	2,000	\$170,000	
C	Renovation of Existing Building Floor at Connection - Level 1- four locations	\$ 85.00	4,000	\$340,000	
D	Renovation of Existing Building Floor at Connection - Level 2 - one location	\$ 85.00	1,000	\$85,000	
E	Renovation of Existing Building Floor at Connection - Level 3 - one location	\$ 85.00	1,000	\$85,000	
F	Renovation of Existing Building Floor at Connection - Level 4,5, & 6 - one location per floor	\$ 85.00	2,000	\$170,000	
G	TBD			\$0	
3	Additional Site Cost Details:		227,801	\$212,500	\$ 0.93
A	Modify Existing Site Parking Area - West side of Project	\$ 8.50	25,000	\$212,500	
B	TBD		0	\$0	
C	TBD		0	\$0	
D	TBD		0	\$0	
E	TBD		0	\$0	
4	High Performance Building Costs	1.50%	227,801	\$1,097,138	\$4.82
5	Inflation Escalation Factor - Annualized	3.65%	227,801	\$4,304,440	\$18.90
A	Base Cost Date	1-Jun-14			
B	Estimated Bid Date	1-Jan-16			
C	Estimated Completion Date	1-Jan-18			
6	Location Factor	1%	227,801	\$743,426.67	\$3.26
	CONSTRUCTION COSTS & OWNER / DEVELOPMENT CONSTRUCTION RELATED COST SUBTOTAL:		227,801	\$79,287,534	\$348.06
	OWNER / DEVELOPMENT SOFT COSTS				
7	Hazardous Materials Cost:		227,801	\$103,000	\$0.45
A	Pre-Construction Survey - Boiler Plant	\$ 7,500.00	1	\$7,500	
B	Other: Pre-Construction Survey - Renovation Areas	\$ 7,500.00	1	\$7,500	
C	Plan and Monitoring: Boiler Plant - None Anticipated	\$ -	0	\$0	
D	Other: Plan and Monitoring - Renovation Areas	\$ 3.00	11,000	\$33,000	
E	Abatement/Removal - Boiler Plant - Not Anticipated any Abatement	\$ -	0	\$0	
F	Other: Abatement/Removal - Renovation Area	\$ 5.00	11,000	\$55,000	
8	Pre-Design / Planning Costs:		227,801	\$333,219	\$1.46
A	Planning Fund Reimbursement	\$ 100,000.00	1	\$100,000	
B	Other:			\$0	
C	Programming	0.25%	1	\$198,218.84	
D	Other:			\$0	
E	Environmental Assessment	\$ 10,000.00	1	\$10,000	
F	Other:			\$0	
G	Geotechnical Investigation / Surveys	\$ 25,000.00	1	\$25,000	
H	Other:			\$0	
9	Design Costs:		227,801	\$5,368,494	\$23.57
A	A/E Design Fees - A/S/M/P/FP/E/C/L	6.50%	1	\$5,153,690	
B	Other:		0	\$0	
C	Other:		0	\$0	
D	Other:		0	\$0	

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E	Other:	\$ -	0	\$0	
F	Other:	\$ -	0	\$0	
G	Additional Printing Costs	\$ 15,000.00	1	\$15,000	
H	High Performance Design Fees	0.25%	1	\$179,805	
I	Value Management Related Costs	\$ 20,000.00	1	\$20,000	
J	Other:			\$0	
10	Property Acquisition:		227,801	\$0	\$0.00
A	Existing Ownership - Not Required	\$ -	0	\$0	
B	TBD	\$ -	0	\$0	
C	TBD	\$ -	0	\$0	
D	TBD	\$ -	0	\$0	
11	Furnishings, Fixtures & Equipment Costs:		227,801	\$16,264,382	\$71.40
A	Furnishings & Fixture Detail Subtotal:			\$5,932,420	
1	Mechanical / Back of House Functions	\$ 10.00	17,887	\$178,870	
2	General Office / Administration Use	\$ 35.00	122,961	\$4,303,635	
3	Clinical Use	\$ 15.00	57,829	\$867,435	
4	Outpatient Surgery Use	\$ 20.00	29,124	\$582,480	
5	Shell Space	\$ -	0	\$0	
6	TBD	\$ -	0	\$0	
7	TBD	\$ -	0	\$0	
8	TBD	\$ -	0	\$0	
B	Equipment Detail Subtotal:			\$10,251,045	\$45.00
1	Mechanical / Back of House Functions	\$ 45.00	17,887	\$804,915	
2	General Office / Administration Use	\$ 45.00	122,961	\$5,533,245	
3	Clinical Use	\$ 45.00	57,829	\$2,602,305	
4	Outpatient Surgery Use	\$ 45.00	29,124	\$1,310,580	
5	Shell Space	\$ -	0	\$0	
6	TBD	\$ -	0	\$0	
C	FF&E Design Cost Subtotal:			\$80,917	
1	Interior FFE Design Fees & Consultation	0.50%	1	\$80,917	
2	TBD	\$ -	0	\$0	
12	Information Technology Costs:		227,801	\$1,712,313	\$7.52
A	Mechanical / Back of House Functions	\$ 1.75	17,887	\$31,302	
B	General Office / Administration Use	\$ 3.50	122,961	\$430,364	
C	Clinical Use	\$ 3.50	57,829	\$202,402	
D	Outpatient Surgery Use	\$ 2.75	29,124	\$80,091	
E	U of U Campus Security - Allowance	\$ 4.25	227,801	\$968,154	
13	Utah Art Costs:	1.00%	227,801	\$719,218	\$3.16
14	Testing & Inspection Costs:		227,801	\$1,387,532	\$6.09
A	Building Code Inspection	0.75%	1	\$594,657	
B	Other Building Code Inspection -	0.00%	0	\$0	
C	Material Testing	0.65%	1	\$515,369	
D	Other Material Testing Costs -	0.00%	0	\$0	
E	Special Inspections	0.35%	1	\$277,506	
F	Other Special Inspection Costs -	0.00%	0	\$0	
G	Other:	0.00%	0	\$0	
15	Contingency	4.58%	227,801	\$3,631,369	\$15.94
16	Moving / Occupancy Costs: Allowance		227,801	\$202,902	\$0.89
A	Mechanical / Back of House Functions	\$ 0.50	17,887	\$8,944	
B	General Office / Administration Use	\$ 1.00	122,961	\$122,961	
C	Clinical Use	\$ 0.85	57,829	\$49,155	
D	Outpatient Surgery Use	\$ 0.75	29,124	\$21,843	
E	Shell Space	\$ -	0	\$0	
17	Builder's Risk Insurance (0.15% of Construction Budget)	0.15%	227,801	\$118,931	\$0.52
18	Legal Services (0.1% of Construction Budget)	0.10%	227,801	\$79,288	\$0.35
19	DFCM Management Costs:		227,801	\$138,038	\$0.61
A	DFCM Project Management Oversight	\$ 0.00135	1	\$107,038	
B	DFCM Administrative Staff	\$ 31,000.00	1	\$31,000	
20	User Fees:		227,801	\$175,000	\$0.77
A	PM Fee based on U of U Policy	\$ -	0	\$0	
B	Fee for "nonstate funding" as defined in the U of U policy - Assume \$30M to be Non-State Funding	\$ 175,000.00	1	\$175,000	
C	TBD	\$ -	0	\$0	
D	TBD	\$ -	0	\$0	
21	Commissioning Costs:		227,801	\$653,789	\$2.87

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A	Third-Party Commissioning Verification	\$ 2.75	227,801	\$626,453	
B	Commissioning Utility Costs	\$ 0.12	227,801	\$27,336	
C	TBD	\$ -	0	\$0	
D	TBD	\$ -	0	\$0	
22	Other Costs:		227,801	\$410,000	\$1.80
A	Energy Study	\$ 10,000.00	1	\$10,000	
B	Integrated Modeling - Allowance of \$200,000	\$ 200,000.00	1	\$200,000	
C	New Electrical Substation Distribution Breakers	\$ 100,000.00	2	\$200,000	
D	TBD	\$ -	0	\$0	
E	TBD	\$ -	0	\$0	
F	TBD	\$ -	0	\$0	
G	TBD	\$ -	0	\$0	
	OWNER / DEVELOPMENT SOFT COST SUBTOTAL:		227,801	\$28,211,314	\$123.84
	PROJECT COST TOTAL:		227,801	\$107,498,848	\$471.90

	PROJECT FUNDING SOURCES:	Funding Amount
1	Previous Funding:	\$0
A	TBD	
B	TBD	
C	TBD	
D	TBD	
2	Other Funding Sources:	\$0
A	TBD	
B	TBD	
C	TBD	
D	TBD	
	Outstanding Funding Requirement:	(\$107,498,848)

Project Information		
Facility Gross Square Feet		227,801
Facility Net Square Feet		
Facility Net/Gross Ratio		0%
Base Cost Date:	1-Jun-14	
Estimated Bid Date:	1-Jan-16	
Estimated Completion Date:	1-Jan-18	
Last Modified Date:	24-Nov-14	
Print Date:	9-Dec-14	