

UNIVERSITY of
HOUSTON

HILTON COLLEGE EXPANSION

Feasibility Study - Summary Report

26 November 2018

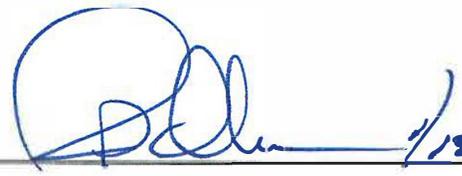
TABLE OF CONTENTS

1. Sign-offs and Project Overview
2. Final Conceptual Design / Renderings
3. Structural Design Narrative
4. Budget Summary
5. Appendix
6. Acknowledgements

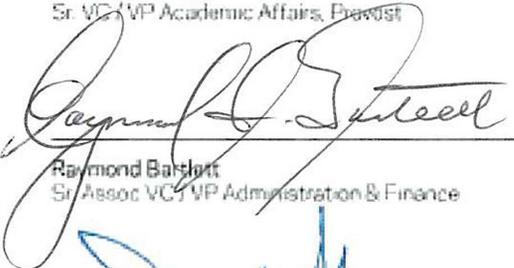
1 | SIGN OFFS

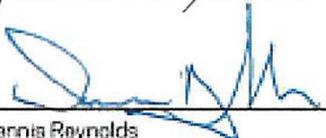
Feasibility Study for Expansion of
Hilton College of Hotel and Restaurant Management
University of Houston

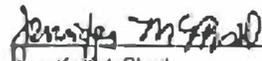
RECOMMENDED FOR APPROVAL


for Jim McShan 1/18/19
Sr. VC / VP, Administration & Finance Date


Paula M. Short 1-7-19
Paula M. Short,
Sr. VC / VP Academic Affairs, Provost Date


Raymond Bartlett 1/8/19
Raymond Bartlett
Sr. Assoc. VC / VP Administration & Finance Date


Dennis Reynolds 1/3/19
Dennis Reynolds
Dean, Hilton College of Hotel and
Restaurant Management Date


Jennifer McPhail 12/19/2018
Jennifer McPhail
Sr. Facilities Planner, Facilities Planning &
Construction Date



1 | PROJECT OVERVIEW

The Hilton College facility on the University campus was originally constructed in the mid-1970's. A late 1980's addition to the south provided hospitality, meeting and academic space expanding the building to its current form. The current interior design, finishes and planning are the result of a major renovation completed in 2010.

The College of Hotel & Restaurant Management solicited a more detailed extension of a 2016 conceptual design study, a process HOK began in August of 2018. That study proposed an expansion of the existing room count to 150 keys by adding a new hotel tower atop the west side of the original north wing. The new more detailed study was undertaken to provide assessment of the feasibility of the proposed expansion within the financial limits of the \$30M total project cost in the proforma.

This new study also outlines a number of supporting interior renovations that reflect an expanded mission for the College and aim to meet the 2020 Hilton brand standard requirements which will be applicable within the planning horizon of the expansion.

This document summarizes the study process and includes the project team's objectives, strategic planning and range of proposed concept studies leading to the proposed design solution.

2 | FINAL CONCEPT

The resolved concept adds just under 64,000 sf of new hotel, academic and support space as well as renovation of nearly 68,000 sf of existing space within Hilton College. The scope of work includes renovation of the 65 existing guest rooms unaffected by the addition to meet Hilton 2020 brand standards

The estimated conceptual total project cost is \$30,347,234.

The resulting project increases the hotel's key count from 86 to 151 on five occupied levels aligned with the existing floors. The design provides new hospitality areas, board rooms and academic teaching classrooms on level 2. The ground level lobby and adjacent back of house will be expanded in conjunction with revamping of the academic spaces west of the ensiting courtyard. This area will house the relocated Hospitality Hall of Fame, displaced by the lobby expansion, a renovated Center for Student Success and new home for Cougar Grounds. Below grade parking garage levels have limited rework outside of the required structural reinforcement.

Scope assumptions:

New Construction:

The addition will be supported by new concrete structural frame extending the current tower floor levels above a portion of the existing two level podium. The existing foundations and primary structural frame under the tower footprint from lower garage level to the level 2 roof will be reinforced to accommodate the increase structural load. The addition includes 5 occupied levels and an interstitial floor. The occupied level enclosure is anticipated to be decorative precast concrete or similar commercial grade construction materials. The enclosure is expected to be 40-45% glazed with punched openings of insulated low-e glazing for the guest rooms. A metal panel and louver wall system is proposed to enclose the interstitial level 3. Window wall is included at the elevator lobby juncture of the new and existing hotel floors.

Areas to be renovated:

Existing Guest Tower Renovation:

Portions of the existing guest tower floors will be reconfigured, sacrificing a number of current keys, to connect the expansion to the existing hotel. Unaffected rooms and public corridors will be upgraded to the 2020 Hilton brand standards ensuring all keys will meet brand requirements. The room and corridor renovation scope will include floor, wall and ceiling finishes with an additional cost allowance for upgraded corridor finishes. Guest room fixed millwork and appurtenances are included in scope including air distribution grilles, electrical plates, etc.. Guest room toilets to include finishes, fixed millwork and replacement (but not relocation of) plumbing fixtures.

Scope assumptions:

Public Area Renovations on levels 1 & 2:

Renovation of the base building public areas include the existing Center for Student Success and first floor office areas west of the current lobby. The hotel lobby and back of house will be expanded by enclosing the southeast breezeway to connect the new tower elevator core to the lobby. Adjacent support space south of the courtyard will be reconfigured to accommodate the core as well as relocated tower exit stairs, new public corridors, classrooms and board room space on level 2. Current south wing guest suites adjacent to the Conrad Hilton ballroom will be renovated into meeting and hospitality uses, though the ballroom will remain unchanged.

Site Improvements:

Resurfacing of the existing terrace west of the Center for Student Success will be combined with landscape improvements to provide pedestrian access from the elevated level 1 of the College to the adjacent site and pedestrian pathways. This new amenity terrace is intended to activate a busy edge of the College and engage the thriving foot traffic through Eusan Park The CSS and relocated Cougar Grounds will have access to new on-deck decorative paving as well as a terraced amphitheater-like landscape with fixed bench seating and a new accessible ramp from grade.

Exclusions and clarifications are outlined in the Cost Summary Worksheets included in the Appendix

Tower Floor (Levels 4 - 8)

■ Brand Std Reno: 5,190 sf

① 75 existing keys (15/lvl) to
2020 room finish standards

■ Renovation: 1,030 sf

② connection existing to new wing

■ Expansion: 9,710 sf

③ 76 new keys in new wing

16 keys at Levels 4-7:

1 two bay suite

1 accessible room

14 standard K/QQ rooms

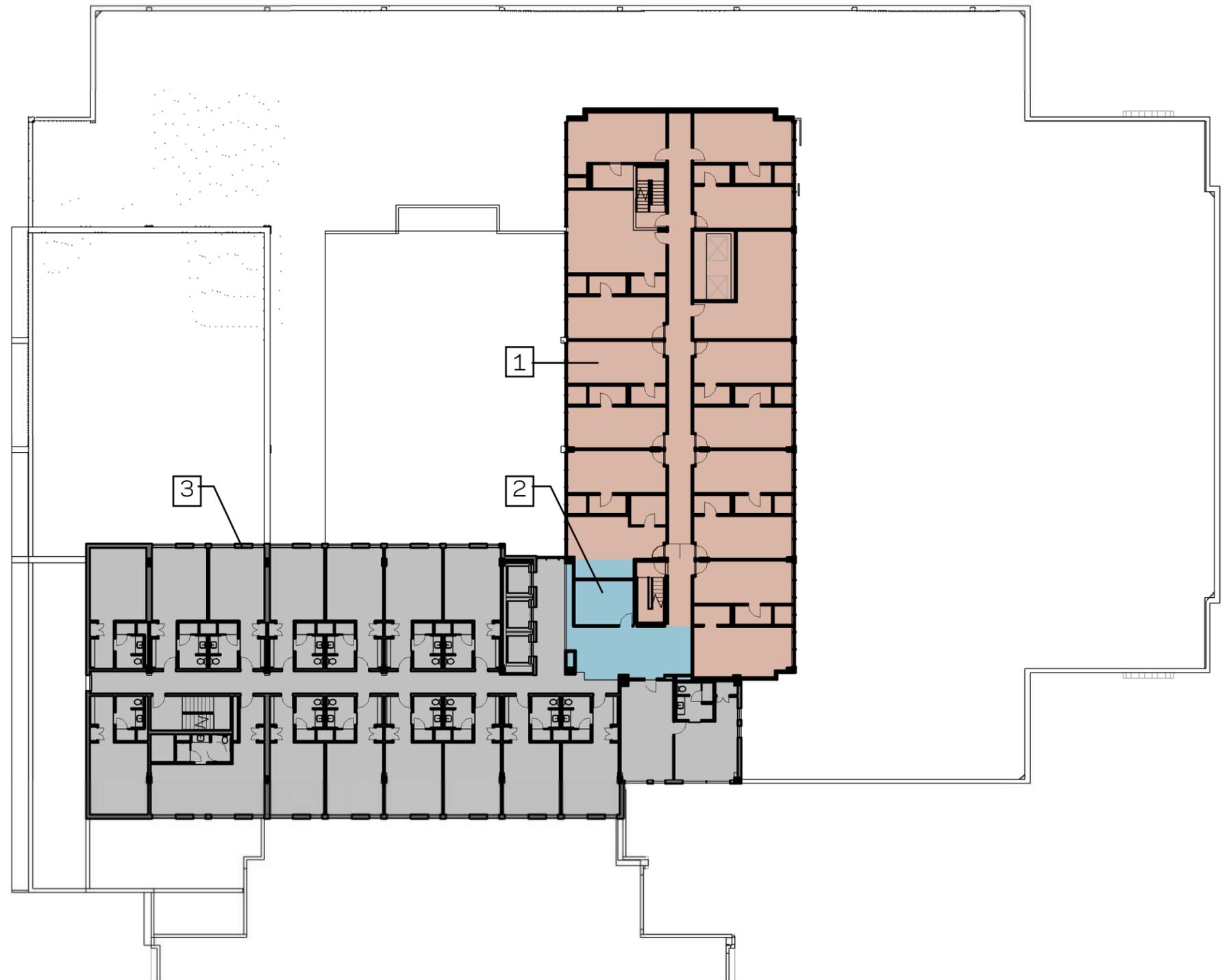
12 keys for Level 8:

1 three bay suite

3 two bay suites

1 accessible room

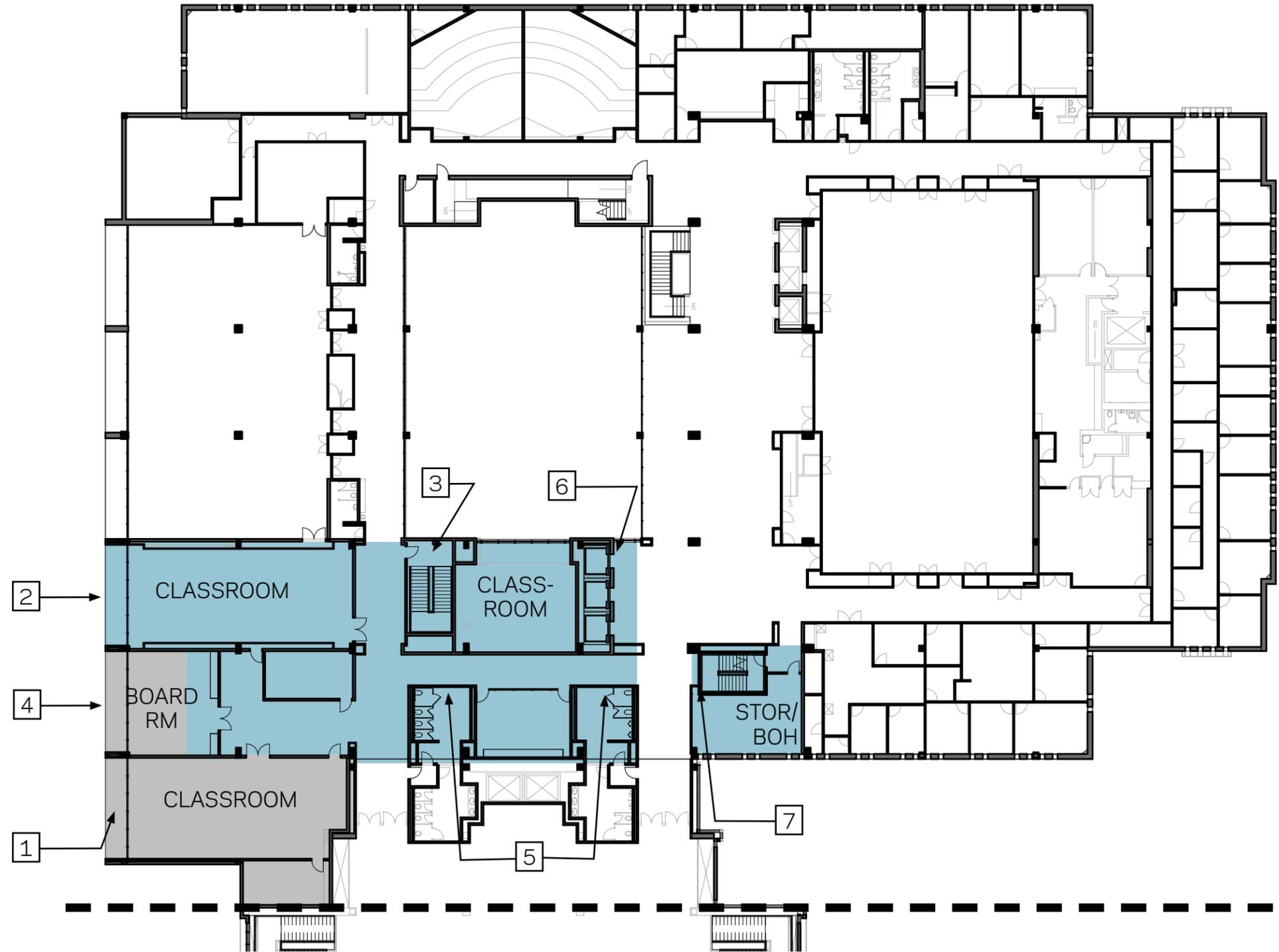
7 typical K/QQ rooms



Level 2 - North

- Expansion: 2,680 sf
 - 1 Floorplate expansion to align with tower above

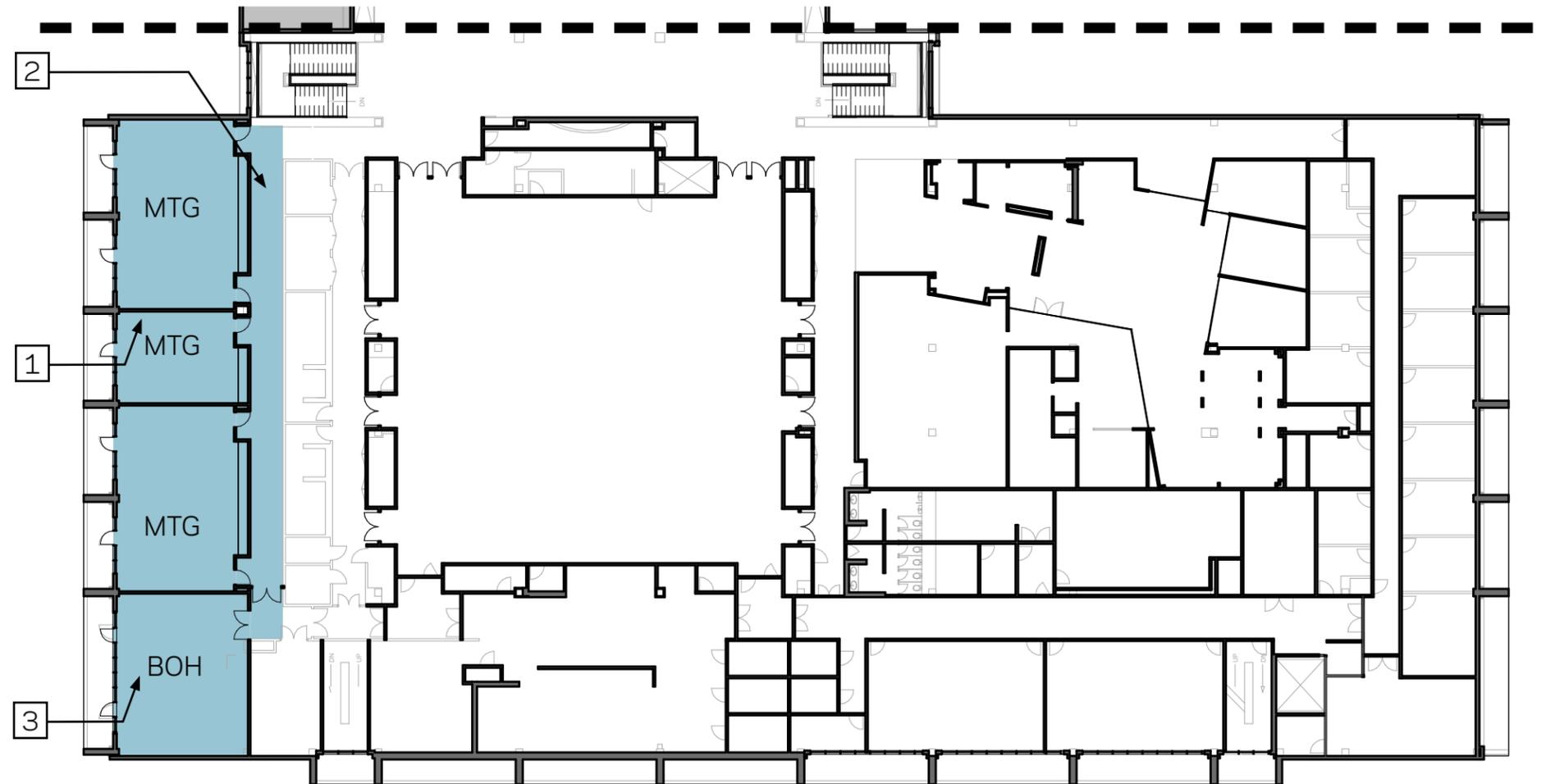
- Renovation: 8,270 sf
 - 2 Renovation of existing classroom area
 - 3 New exit stair from L2
 - 4 Board / Meeting rooms
 - 5 Expand existing toilet rooms
 - 6 Tower elevator core
 - 7 Hotel tower exit stair transfer



Level 2 - South

■ Renovation: 4650 sf

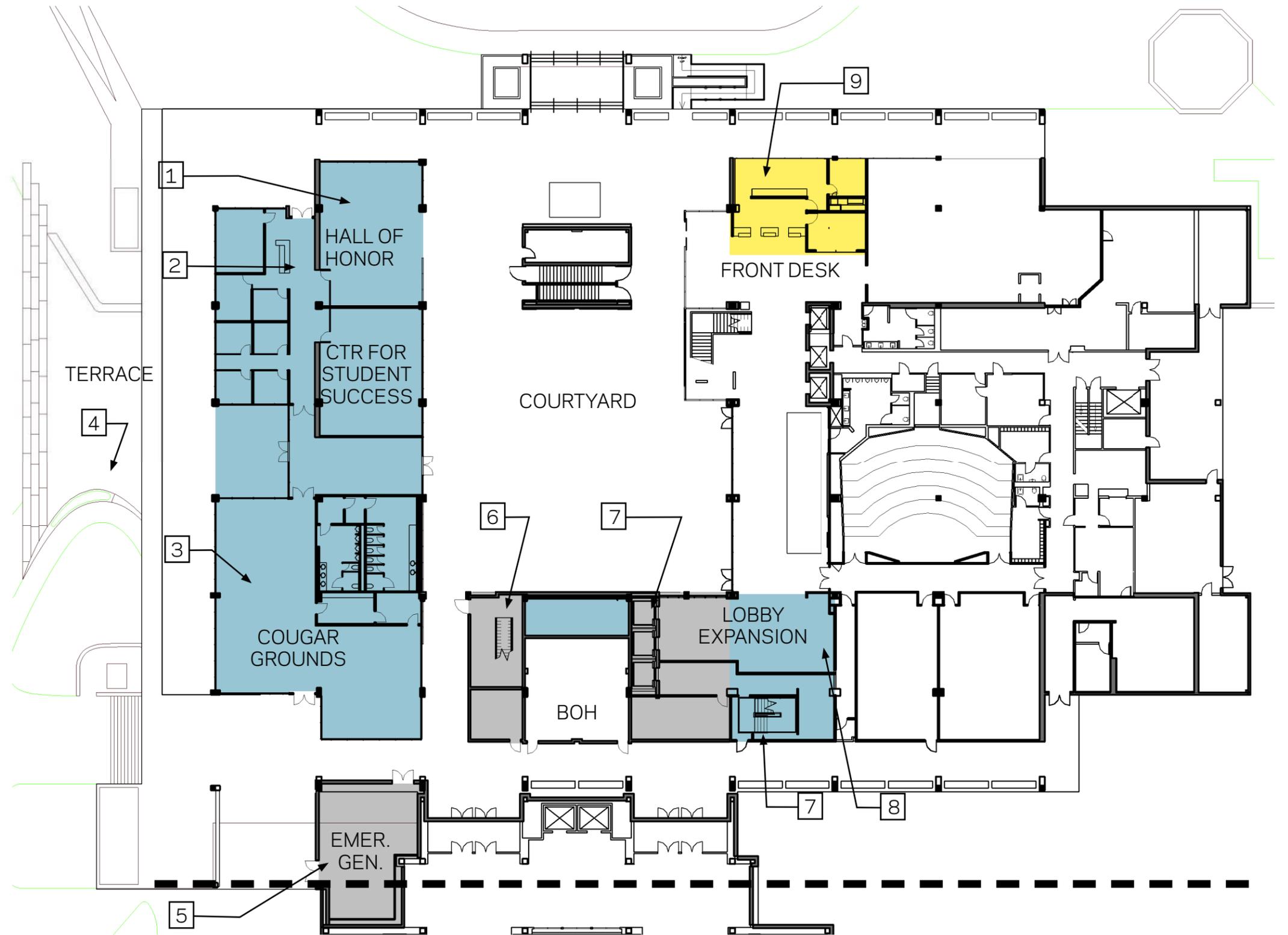
- 1 Meeting / Board Room
- 2 Public corridor (hospitality quality finishes)
- 3 Back of house /service



Level 1 - North

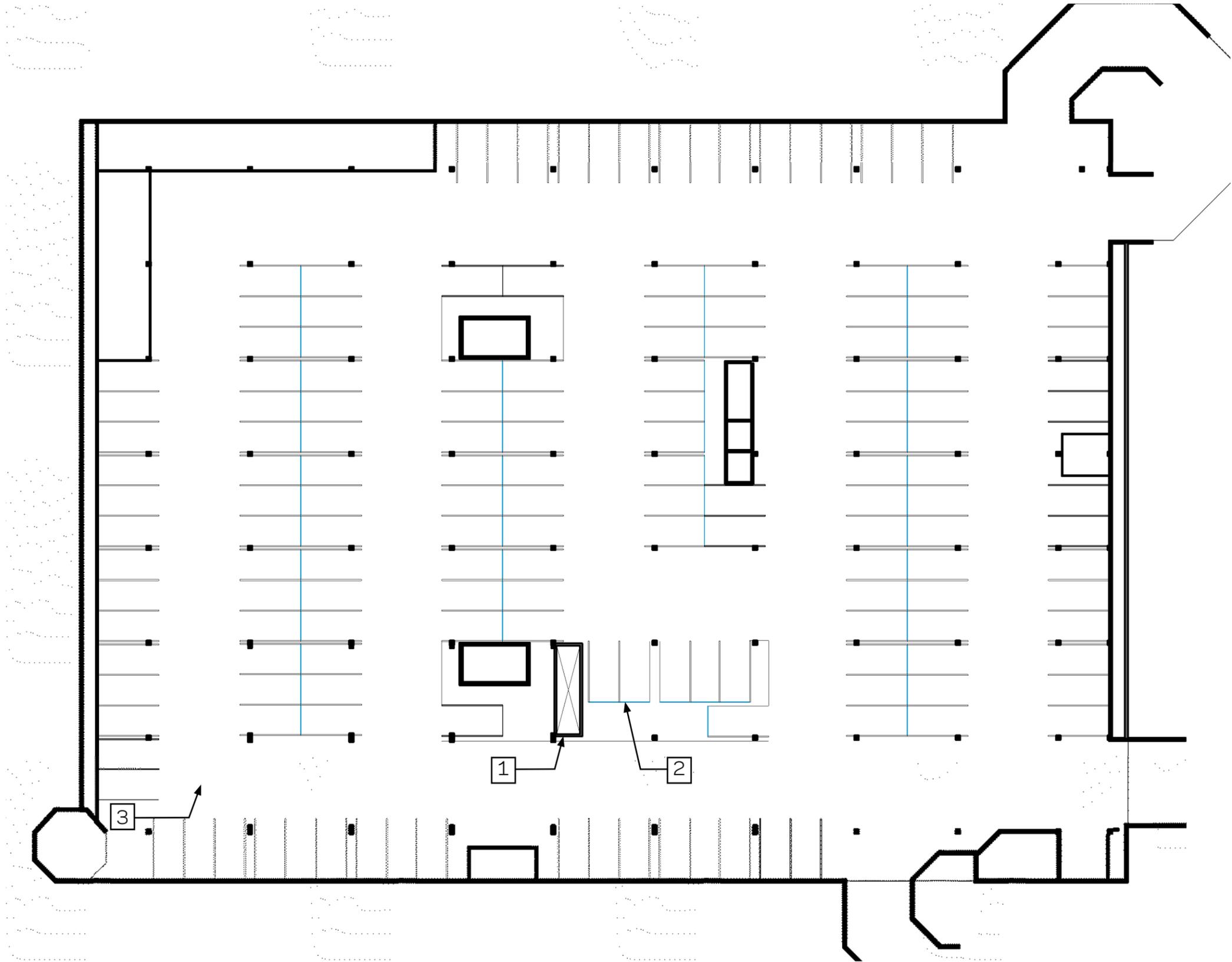
- Expansion: 3,020 sf
- Renovation: 12,025 sf
- Add alternate 650 sf

- 1 Hospitality Hall of Honor
- 2 Center for Student Success
- 3 Cougar Grounds
- 4 Terrace plaza and site landscaping
- 5 Emergency Generator
- 6 Exit stairs
- 7 Tower elevator core
- 8 Expanded Lobby
- 9 Renovated front desk (add alternate)



Garage Level

- 1 Tower elevator pit
- 2 Restriped spaces









3 | STRUCTURAL ENGINEERING NARRATIVE

A structural engineering feasibility study was provided in April of 2018 by HOK to examine the viability of the prior conceptual massing study. This study was utilized as a baseline strategy for the design process outlined in this document. Additional structural analysis to verify the ability for this concept to work for alternative approaches including the final five story additions was included in the process.

University of Houston

Hilton Hotel

Structural Narrative for Expansion

General:

The existing structure has two parking levels below grade and three levels above grade. It is a concrete framed building using a pan and joist construction with the joists spaced at 3'-0" on centers. Fourteen inch deep pans support a 5 1/2" thick slab, the joists frame into concrete girders supported on concrete columns.

The existing building is set up on a 28'-0" by 30'-0" grid with the joists spanning the 28'-0" span and the girders along the 30'-0" spans. The two levels below grade are parking levels and the upper levels are occupied levels. The ballroom is on the second level above grade with its roof framed with long span steel joists.

Purpose:

The purpose of the investigation is to see whether it is possible to add four additional room levels over part of this existing structure.

Analysis & Recommendations:

We looked at two approaches to see how this addition may be accomplished:

- Option 1: Provide a lightweight concrete two-way post-tensioned flat slab. This will be done by adding concrete columns over the top of the existing columns and spanning an 8 1/2" thick post-tensioned slab prestressed in both directions. Such a slab will span 28.0' in one direction and 30.0' in the other.

In the ballroom area, additional concrete columns will have to be provided with new footings to accommodate the tower addition.

- Option 2: Place steel columns on top of the existing columns and frame the guest rooms with steel beams spaced at 14'-0" on centers supported on steel girders with a 3" deep x 18 gage composite metal deck with a total thickness of 5 1/4". The lightweight concrete slab will be 3 1/4" of concrete over the top of the deck. The steel beams will be 16" deep with a total depth of 21 1/4". The girders will need to be much heavier and will be the same depth. This option will add a bit over 15" to the floor to floor height. The beams and girders will have to be fire-proofed and will require a ceiling but it will be approximately 30 pounds per square foot lighter.

Results:

- Option 1: 8 1/2" thick prestressed concrete flat slab. The existing structure was not designed to support four additional levels of guest rooms. On looking at the present loads imposed on the columns and footings, we find that the footings at present are adequate for the existing loads and that the addition of any floors will require that the footings be increased in size. Further, the columns in these areas reduce in size as they go up the building. Even at the bottom level, the vertical reinforcement in the columns is quite high, a little over 3 percent. Generally it is limited to 4 percent, which means that the columns will also have to be strengthened at each level below the present top level.
- Option 2: Steel Floors: Our calculations indicate that even though this option is significantly lighter than the concrete slab option it still overloads the columns and the footings. Its advantage over the concrete slab option is that it is easier to add steel columns on the top of existing concrete columns than it is to add concrete columns on top of concrete columns.

Recommendations:

Given that the existing columns and footings have to be strengthened and enlarged respectively, there are two approaches:

- Since under the steel floors addition or the flat slab addition, the increase in column load capacity required is so much that strengthening the columns with the use of carbon fiber wrap is not possible. Therefore, the columns will have to be enlarged with horizontal dowels, additional vertical bars and concrete. The vertical bars will have to be drilled through the existing concrete girders, or joists and slabs. Since the columns reduce in size from both ends it will be necessary to enlarge each column from each of the two sides with dowels into the two forces to transfer the load to the additions.

Presently the columns vary in size from 18" x 22" below to 18" x 18" and even as small as 14" x 14" at the top floor. Per our calculations, we estimate that the size of column at the top be increased to a minimum of 18" x 32" for the steel option and this increase of 7 inches each side be carried through to the top of the foundation.

The footings also will have to be enlarged to engage a larger bearing area. This is very difficult to do as along with the bearing area, the existing bottom reinforcing steel area has to be increased as well. This can be done by roughening the sides of the existing footing. Drilling dowels into each side of the existing footing at 4 inches from the bottom, then roughening the top surface of the existing footing and a layer of new concrete added to the top so that the increase in depth enables the reinforcing steel in the existing footing to be adequate for the new loads. In this case there is already an existing cap which would require that the cap as well as the footing be increased in depth. This approach will be to increase the column widths by 14 inches and the footing sizes by 2.0 feet along each of four sides and the depth by approximately 8 inches; hopefully, it will not affect the parking layout very much.

A sketch that shows how the column and the footings may be increased is attached at the end of this document.

- The other approach is to add new steel columns in the middle of each span so that each 28.0' x 30.0' bay will now become 14.0' x 15.0' in the lower areas. Such a scheme will allow access to new footings approximately 10'-0" x 10'-0" to be placed between existing footings but will totally destroy the parking and the lower occupied areas.

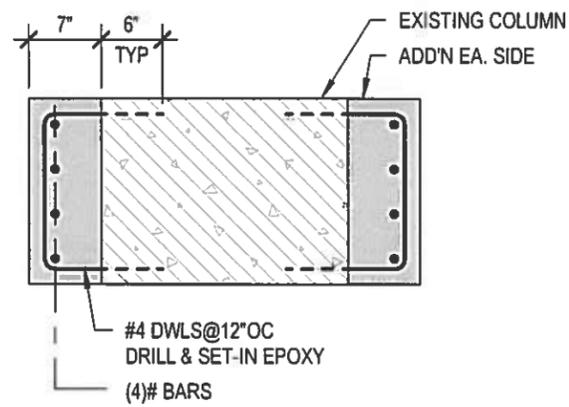
Conclusions:

The processes noted here are quite costly. If parking is not to be compromised, then increasing the column and footing sizes is very labor intensive and will require full time inspection to see that it is done properly. The lesser expensive option of dropping in additional columns compromises the parking making the garage unusable for parking be it self-parking or valet parking.

Where garages have been added to vertically, it has been to 9 and 10 level garages where the addition of a floor or two has allowed the columns and footings to be adequate and all that was required was the vertical expansion which was always framed with lightweight (open web steel joists) steel beams and steel columns. There too there has been a significant premium in cost so that the steel may be erected over the existing garage.

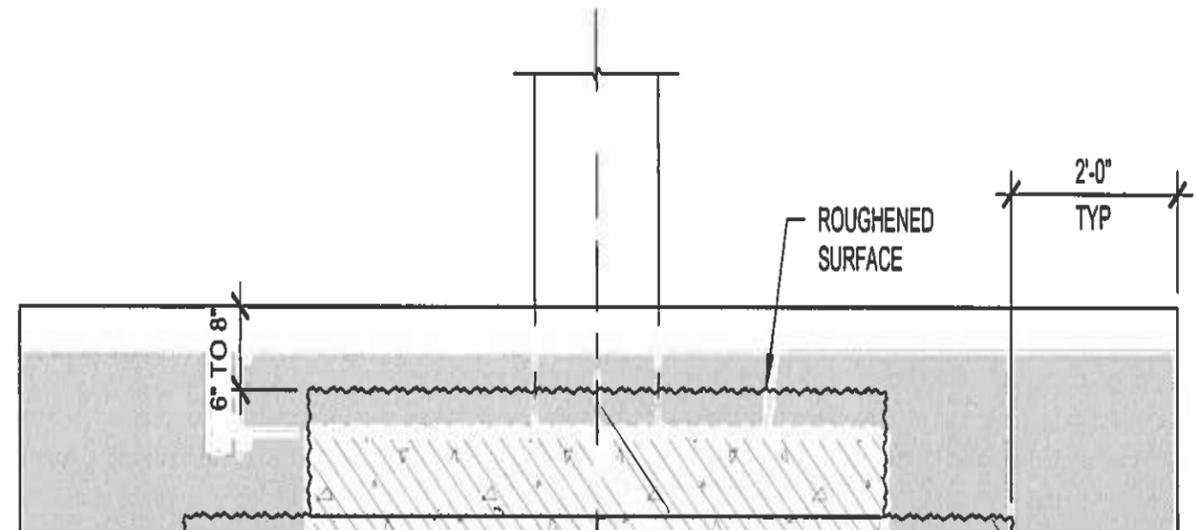
STRUCTURAL ENGINEERING NARRATIVE

2018-04-05 7 21 47 AM



1 PLAN VIEW @ ADD'N TO EXISTING COLUMN
3/4" = 1'-0"

1 PLAN VIEW @ ADD'N TO EXISTING COLUMN
3/4" = 1'-0"



4 | BUDGET SUMMARY

	GSF	Cost / SF	Subtotal	GC Fees+ Conditions	CMAR	Design Contingency	Escalation (2020)	Fees / Soft costs	Owners Contingency	Subtotal
1 Core + Shell				10%	5%	5%	6.00%	10%	6.00%	
	63,960	\$240.00	\$15,350,400	1,535,040	767,520	767,520	921,024	1,535,040	921,024	\$21,797,568
Levels 4-8 9710 sf ea.	48,550	\$240.00	\$11,652,000							
Level 3	9,710	\$240.00	\$2,330,400							
Level 2	2,680	\$240.00	\$643,200							
Level 1	3,020	\$240.00	\$724,800							
2 Renovation				10%	5%	5%	6.00%	10%	6.00%	
	29,575		\$3,039,900	303,990	151,995	151,995	182,394	303,990	182,394	\$4,316,658
Levels 4-8 720 sf ea.	3,600	\$100.00	\$360,000							
Level 3	1,030	\$180.00	\$185,400							
Level 2	12,920	\$100.00	\$1,292,000							
Level 1	12,025	\$100.00	\$1,202,500							
3 2020 Hilton				10%	5%	5%	6.00%	10%	6.00%	
	25,950		\$2,725,500	303,990	151,995	151,995	182,394	303,990	182,394	\$4,002,258
Levels 4-8 5190 sf ea. rooms	25,950	\$90.00	\$2,335,500							
Levels 4-8 780 sf ea. corridors	3,900	\$100.00	\$390,000							
4 Site Improvements				10%	5%	5%	6.00%	10%	6.00%	
			\$162,500	16,250	8,125	8,125	9,750	16,250	9,750	\$230,750
Total Project Cost										\$30,347,234

5 | APPENDIX

DESIGN PROCESS SUMMARY

A series of meetings were held from August to October of 2018 to review and discuss progress of the conceptual design.

The project team comprised of stakeholders from throughout the University:

Hilton College staff: Dean Dennis Reynolds, Miguel Cabrera, Akash Grover, Joel Jaffe

University Facilities Planning & Construction: Jennifer McPhail, Christa Rieck, Jim Taylor

Architectural Design Team: HOK

Randy Taylor, Ben Crawford, Jim Halloran, Noon Leelardcharonen, CCS International

MEETING 1 - KICKOFF

Project Kickoff Meeting established primary project Goals:

Provide conceptual design study for expansion and renovation of existing Hilton School and Hotel facility.

Goal is to support strategic planning meeting with Regents in October.

Study due end of September including plans and images

Program areas include:

Center for Student Success renovation on North Wing L1

Relocation of Cougar Grounds to north wing L1 with outdoor seating

Expansion of Hilton Ballroom and relocation of adjacent L2 suites adjacent

Raise key count to 150 keys from current 86

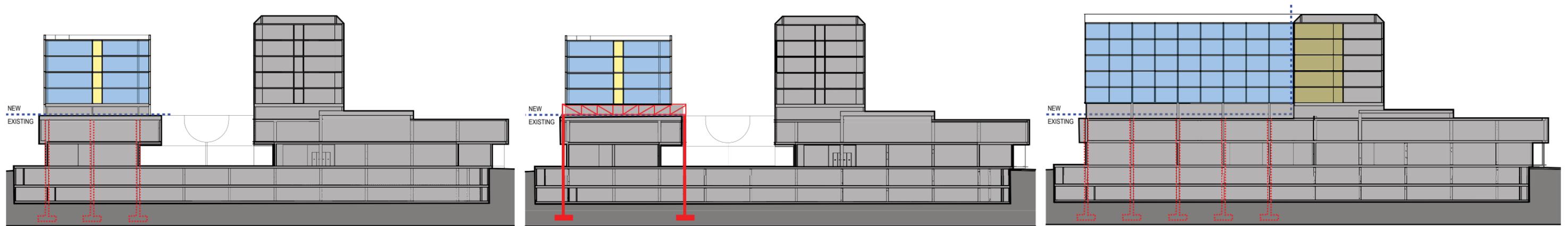
Keys to include 1 three-bay suite and 7 two-bay suites (increase of 2)

Minimize impact to parking. Consider operational and physical constraints of existing

MEETING 2 - EXPANSION CONCEPTS

Three expansion concepts were initially proposed and review by the project team. Concepts A and B stem from the prior conceptual design study. Architectural and engineering due diligence led to inclusion of third option proposing an alternative expansion concept C.

This last alternative, C, was selected after debate and consideration by the project team.



CONCEPT A

Primary Goals:
Utilize existing structure as proposed in prior expansion proposals

Requires expansion of existing columns and footings

Significant disruption to interior spaces

Disrupts existing Shamrock room with interior columns

CONCEPT B

Primary Goals:
Reduce disruption to interior spaces, particularly to Shamrock Ballroom by bridging over existing

Offset of primary bridging structure simplifies construction

Significant visual impact to existing interior

CONCEPT C

Primary Goals:
Utilize existing structure but reallocate disruption lower impact interior spaces

Simplify hotel operations, staffing and renovations for CSS and Cougar Grounds by eliminating 2nd lobby.

Complicate use of existing hotel tower during construction

MEETING 3 - CONCEPTUAL MASSING DEVELOPMENT

Two design proposals were submitted for the architectural form of Concept C.

The hotel floor plan was extended to the west to create a strong architectural identity for the expanded College.

This concept was created in support of a strategy providing a newly active edge for the College addressing main pedestrian circulation routes through the Lynn Eusan park greenspace.

Concept C1 was selected as preferred direction.

Facilities team requested selected concept development be reported with conceptual estimates for next stage of review.

Update of scope expectation at meeting required budget to incorporate expected 2020 Hilton brand standards upgrades for existing hotel keys and renovation of College F&B venues.

MEETING 3 - CONCEPTUAL MASSING DEVELOPMENT



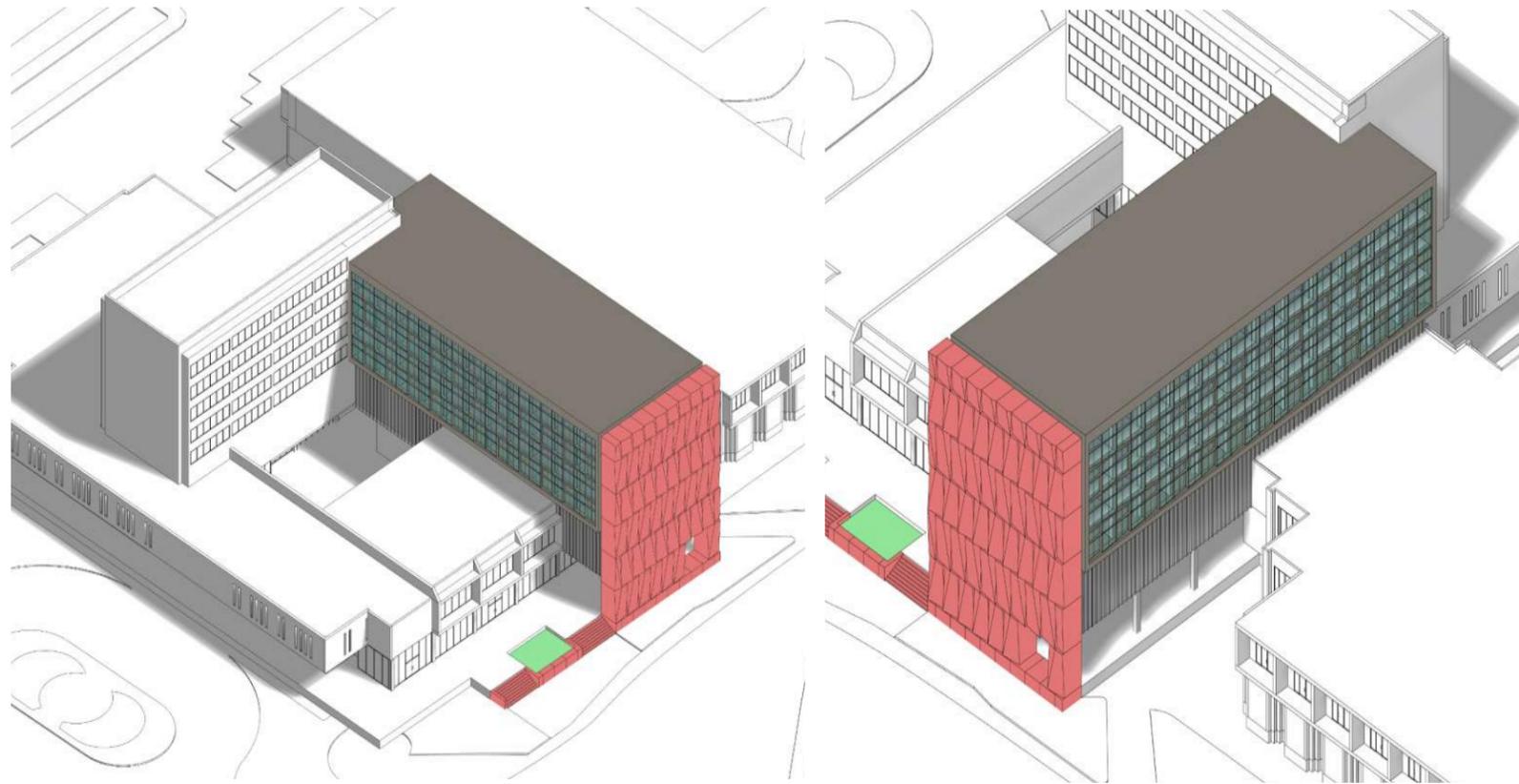
CONCEPT C1

Hotel floor expansion on levels 3 -8.
All new keys accommodated in floors 4-8 of new wing.

Architectural form extended via 30' cantilever of hotel tower beyond current West elevation of podium.



MEETING 3 - CONCEPTUAL MASSING DEVELOPMENT



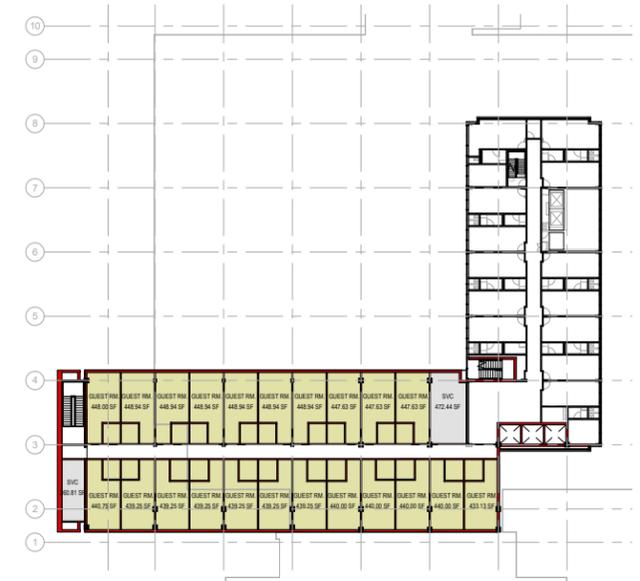
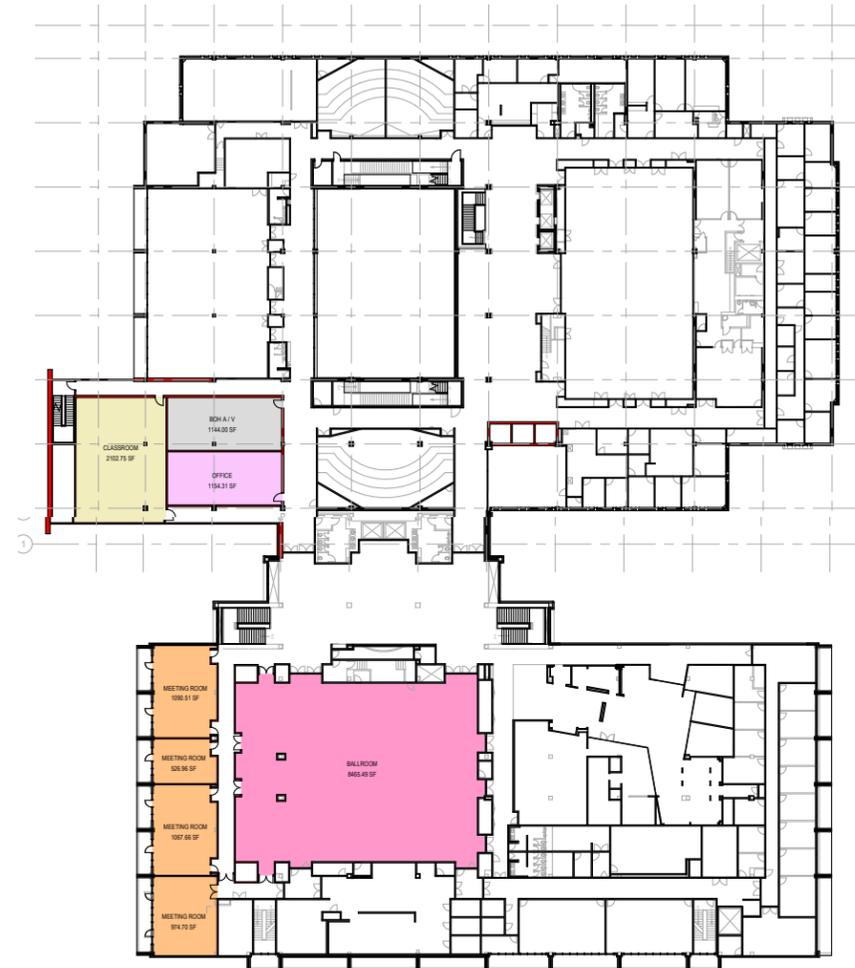
CONCEPT C2

Hotel floor expansion on levels 3 -8.
All new keys accommodated in floors 4-8 of new wing.

Expansion extends beyond current West elevation of podium supported by exit stair and utility enclosure. Textured precast form addresses Eusan Park to the west of the College.



MEETING 3 - CONCEPTUAL MASSING DEVELOPMENT



CONCEPT C2

Podium level renovations proposed on Level 1 include existing Lobby, Eric's as well as Center for Student Success. Buildout of Cougar Grounds includes outdoor seating and activity terrace west edge of level 1 to provide connectivity to adjacent grade level pedestrian paths.

Level 2 renovations include academic classroom, support and departmental office and meeting spaces.

BUDGET REVIEW AND RECONCILIATION

Initial conceptual estimate yielded pricing of scope well beyond project budget of \$30MM. Project team met virtually to discuss alternative strategies for meeting project objectives.

The following directives were accepted by project team:

1. Hotel Expansion

- Center for Student Success renovation on North Wing L1
- Relocation of Cougar Grounds to north wing L1 with outdoor seating
- Renovation of L2 south keys into meeting / board room spaces without Conrad Hilton Ballroom expansion
- Raise key count to 150 keys from current 86
inclusive of 1 three-bay suite and 7 two-bay suites (increase of 2)

2. Brand Standard Renovation

- Renovate existing hotel keys to 2020 Hilton brand standards
- Postpone renovations costs for future F&B (Eric's) and Gastropub venue

3. Proposed Budget \$30MM inclusive of all project costs

Architectural team tasked with update to project design to address these needs

MEETING 4 - CONCEPT UPDATE

Architectural team reviewed a range of alternatives to respond to budget objectives.

Multiple conversations between cost estimators and University Facilities and Engineering staff, including review of existing systems needs, ran concurrently to refine alternatives.

The reduction strategies examined a range of cost targets to address budgetary and scope objectives.

Design team noted conservative estimating and broad budget contingencies inflating construction costs over 50%. Estimate reflected significant unknowns within a renovation of this complexity.

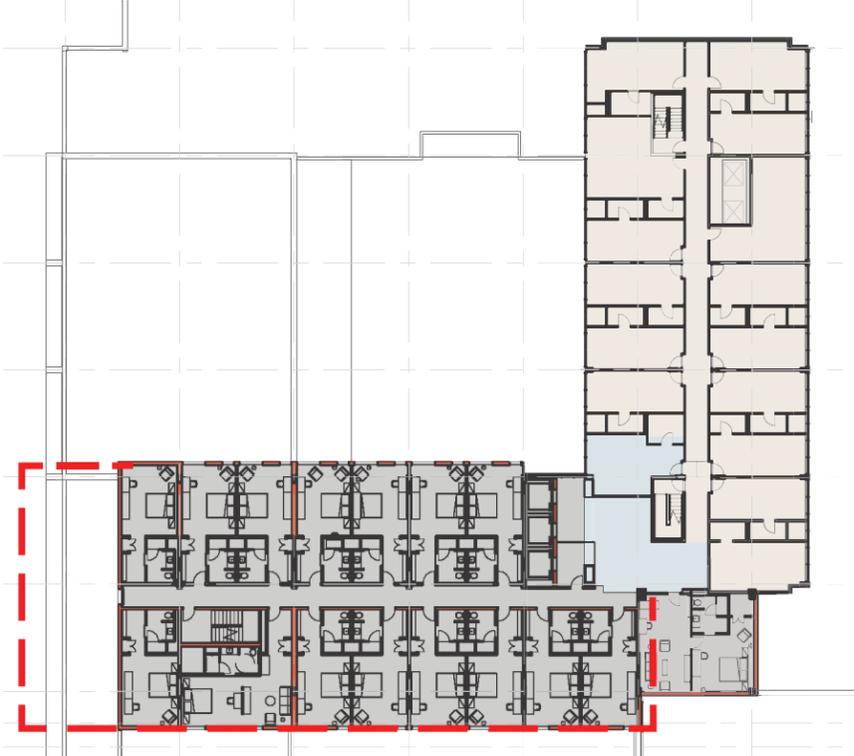
Construction and design for the Expansion fell within the budget range while renovations of the existing keys still took cost beyond target. As a result of the discussion, the project team adopted the following additional measures.

1. Soliciting brand standard renovation cost expectation from Hilton corporate to reduce costs
2. Acceptance of potential minimal reduction of target key count
3. Reduction of level 1 and 2 expansion and renovation areas.
Academic and hospitality areas and enclosure of emergency power equipment retained.
4. Exclusion of updates to existing building systems based on Engineering staff input on existing system capacities. Additional MEP/FP capacity included for expansion space only.
5. Reassessment of overlapping budget contingencies
6. **Reduction Concept 1 for tower floors and Concept 2 for podium selected to maximize cost reduction.**

MEETING 4 - CONCEPT UPDATE



BASELINE (Concept C2)
151 Keys
Conceptual Cost Estimate: \$40,290,120



TOWER REDUCTION CONCEPT 1
151 Keys
Conceptual Cost Estimate: \$35,100,770



TOWER REDUCTION CONCEPT 2
141 Keys
Conceptual Cost Estimate: \$31,921,770

CONCEPTS

Cost saving strategies from Baseline (Concept C2) proposed to address budget challenges. Primary method was reduction of tower floor cantilevered area and renovation of existing hotel keys. Strategies explored reduction in square footage and key count with goal of meeting budget target

Revised vertical circulation saved 15 existing keys, allowing significant reduction in new construction. simplified connection to existing hotel floors while keeping single ground level lobby. Reduce podium expansion and renovation to provide additional savings

MEETING 4 - CONCEPT UPDATE

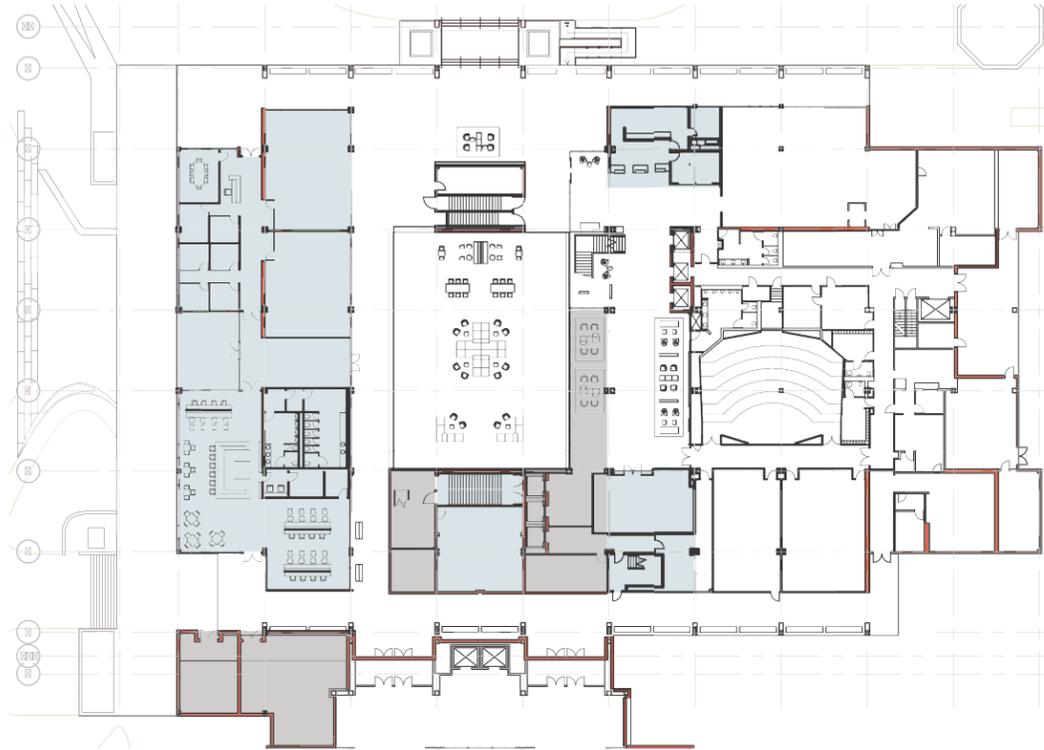
REDUCTION 1

Ground Floor

Expansion:

West Wing:
Relocation of Museum
Center for Student Success
Cougar Grounds
Emergency Generator
enclosure

East Wing:
Renovated front desk
New elevator core location
Expanded lobby footprint



REDUCTION 1

Podium Floor

Expansion

West Wing:
Renovation / expansion of
existing classroom area.
New Board / Meeting rooms
Expansion to align with
footprint of tower above

East Wing:
New elevator core location
Office area revised to
accommodate Hotel tower exit
stair transfer

Renovation

South Wing:
Renovation of Suites to
Meeting / Board Room spaces



MEETING 4 - CONCEPT UPDATE

REDUCTION 2

Ground Floor

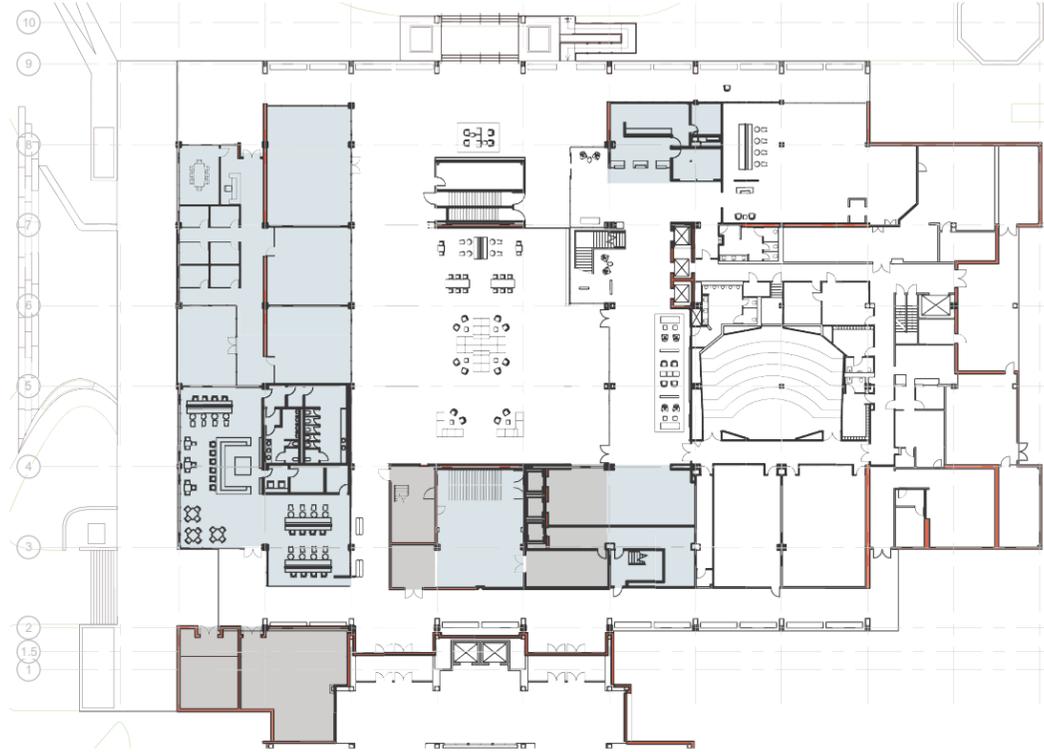
Expansion:

West Wing:

Relocation of Museum Center for Student Success
Cougar Grounds
Emergency Generator enclosure

East Wing:

Renovated front desk
New elevator core location
Lobby seating expands into reclaimed Museum footprint



REDUCTION 2

Podium Floor

West Wing:

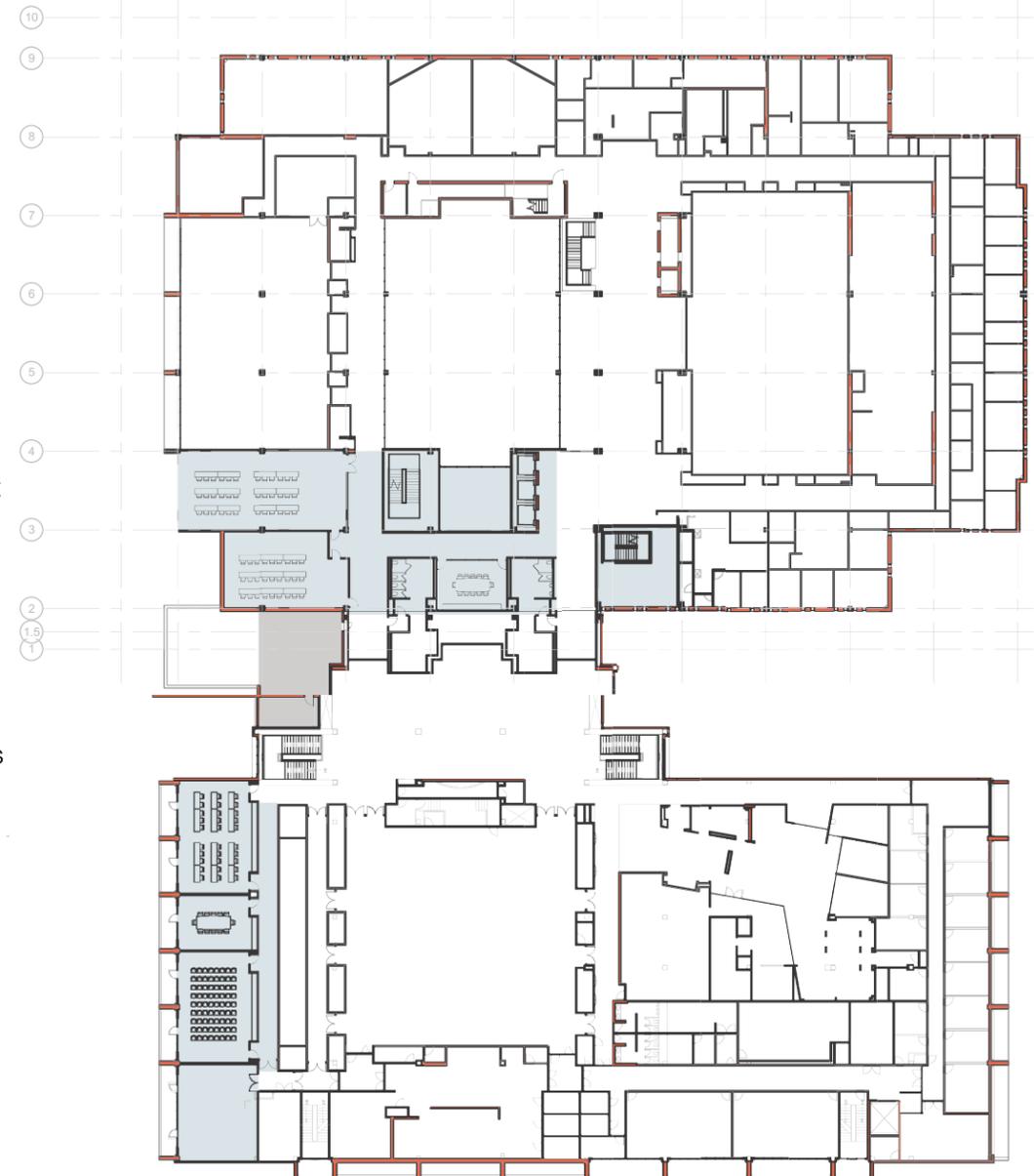
Renovation of existing classroom area.
New Board / Meeting rooms
Small expansion to align with footprint of tower above

East Wing:

New elevator core location
Office area revised to accommodate Hotel tower exit stair transfer

South Wing:

Renovation of Suites to Meeting / Board Room spaces



COST SUMMARY WORKSHEETS

Concept Estimate
University of Houston Hilton Hotel
Houston, TX
119,485 GSF



Submitted to:
HOK
3200 Southwest Freeway Suite 900
Houston, TX 77027

Owner:
University of Houston



CCS Project # 18.140

11767 Katy Freeway
Suite 370
Houston, TX 77079
832.288.4762
www.CCSdifference.com

Project UH Hilton Concept

NOTES REGARDING THIS ESTIMATE:

These Concept estimates are based on narratives, discussions, as well as concept floor plans prepared by the office of HOK together with discussions and supplemental information .

This estimate assumes a normal market condition.

This estimate assumes five or more qualified Subcontractors competitively bidding on bid packages for this project.

This estimate assumes a competitively bid contract (Design Bid Build approach)

Those cost estimates provided by the Architect and/or Consultants are identified in the body of the estimate.

Escalation is included assuming 2020 as the start of construction.

THIS ESTIMATE EXCLUDES:

- 1) Professional fees, testing, moving expense, etc. for Owner's account,
- 2) Furnishings and equipment other than those shown in the body of the estimate,
- 3) Premium costs for work done in phases, out of sequence, out of hours,
- 4) Owner provided items
- 5) Hazardous material removal and abatement,
- 6) Construction Contingencies.

This estimate is based on preliminary information available at this time. The scope of this estimate should be reviewed to insure our interpretation of the drawings and other information is correct. This estimate should be updated as the design evolves and is completed.

This cost estimate represents our opinion of probable construction cost for this project. We have exercised due professional diligence in the preparation of this estimate. Since we have no control over final material selection, bidding strategies and market conditions, no guarantee is given or implied with this estimate.

PARAMETER COSTING MODEL

Project UH Hilton Concept

GROSS AREA: 63960 SF

11/26/2018

COST SUMMARY - NEW TOWER

DESCRIPTION	TOTAL COST	RATE/SF	% of Total
01 - FOUNDATIONS	\$245,688	\$3.84	1%
012 - Special Foundations - Column Reinforcement, Footings in Basement	\$245,688	\$3.84	
02 - SUBSTRUCTURE	\$15,100	\$0.24	0%
021 - Slab on Grade - at New Areas of Construction	\$15,100	\$0.24	
03 - SUPERSTRUCTURE	\$1,720,200	\$26.89	8%
031 - Floor Construction - Concrete Frame from Narrative	\$1,218,800	\$19.06	
032 - Roof Construction - Concrete Frame from Narrative	\$194,200	\$3.04	
033 - Stair Construction - 2 New Stairs Pan filled steel	\$307,200	\$4.80	
04 - EXTERIOR CLOSURE	\$2,548,400	\$39.84	12%
041 - Exterior Walls - Precast 60%	\$1,382,400	\$21.61	
042 - Exterior Doors & Windows - 40% Punched Opening/Storefront	\$1,166,000	\$18.23	
05 - ROOFING - Built Up Roof	\$204,200	\$3.19	1%
06 - INTERIOR CONSTRUCTION	\$2,238,600	\$41.00	10%
061 - Partitions - New Drywall where required	\$767,520	\$15.00	
062 - Interior Finishes - Floors, Ceilings, Wall Finishes	\$1,151,280	\$20.00	
063 - Specialties - Toilet Accessories, Wayfinding, Fire Protection Specialties	\$319,800	\$6.00	
07 - CONVEYING SYSTEMS - 2 New Elevators, 8 Stops Each	\$800,000	\$12.51	4%
08 - MECHANICAL	\$2,782,260	\$43.50	13%
081 - Plumbing - For New Construction Only	\$639,600	\$10.00	
082 - HVAC - For New Construction Only	\$1,918,800	\$30.00	
083 - Fire Protection - For New Construction Only	\$223,860	\$3.50	

PARAMETER COSTING MODEL				
Project UH Hilton Concept				
GROSS AREA: 63960 SF		11/26/2018		
COST SUMMARY - NEW TOWER				
DESCRIPTION	TOTAL COST	RATE/SF	% of Total	
09 - ELECTRICAL	\$4,476,152	\$70.00	21%	
091 - Service & Distribution - For New Construction Only	\$3,196,952	\$50.00		
092 - Lighting & Power - For New Construction Only	\$639,600	\$10.00		
093 - Special Systems - For New Construction Only	\$639,600	\$10.00		
10 - EQUIPMENT	\$319,800	\$6.00	1%	
102 - Furnishings - Built-in Cabinetry Only	\$319,800	\$6.00		
12 - COST OF WORK	\$15,350,400	\$240.00	70%	
13 - PROJECT MARKUPS - PER UH	\$6,447,168	\$100.80	30%	
131 - GC Fees + Conditions - 10%	\$1,535,040	\$24.00		
132 - CMAR Fee - 5%	\$767,520	\$12.00		
133 - Design Contingency - 5%	\$767,520	\$12.00		
134 - Escalation - 6%	\$921,024	\$14.40		
135 - Fees/Soft Costs - 10%	\$1,535,040	\$24.00		
136 - Owner Contingency - 6%	\$921,024	\$14.40		
TOTAL PROJECT CONSTRUCTION COST	\$21,797,568	\$340.80		

PARAMETER COSTING MODEL				
Project UH Hilton Concept				
GROSS AREA: 29575 SF		10/15/2018		
COST SUMMARY - RENOVATION ASSOCIATED WITH NEW TOWER				
DESCRIPTION	TOTAL COST	RATE/SF	% of Total	
06 - INTERIOR CONSTRUCTION	\$1,804,075	\$61.00	8%	
061 - Partitions - New Drywall where required	\$532,350	\$18.00		
062 - Interior Finishes - Floors, Ceilings, Wall Finishes	\$621,075	\$21.00		
063 - Specialties - Toilet Acc., Wayfinding, FP Specialties, Operable Partition	\$354,900	\$12.00		
064 - Interior Demo	\$295,750	\$10.00		
08 - MECHANICAL	\$443,625	\$15.00	2%	
081 - Plumbing - Distribution as Required	\$147,875	\$5.00		
082 - HVAC - Distribution as Required	\$236,600	\$8.00		
083 - Fire Protection - Distribution as Required	\$59,150	\$2.00		
09 - ELECTRICAL	\$614,750	\$20.79	3%	
091 - Service & Distribution - Distribution as Required	\$319,000	\$10.79		
092 - Lighting & Power - Distribution as Required	\$147,875	\$5.00		
093 - Special Systems - Distribution as Required	\$147,875	\$5.00		
10 - EQUIPMENT	\$ 177,450	6.00	0%	
102 - Furnishings - Built-in Cabinetry Only	\$177,450	\$6.00		
12 - COST OF WORK	\$ 3,039,900	\$102.79	14%	
13 - PROJECT MARKUPS - PER UH	\$1,276,758	\$43.17	6%	
131 - GC Fees + Conditions - 10%	\$303,990			
132 - CMAR Fee - 5%	\$151,995			
133 - Design Contingency - 5%	\$151,995			
134 - Escalation - 6%	\$182,394			
135 - Fees/Soft Costs - 10%	\$303,990			
136 - Owner Contingency - 6%	\$182,394			
TOTAL PROJECT CONSTRUCTION COST	\$ 4,316,658	\$ 145.96		

PARAMETER COSTING MODEL				
Project UH Hilton Concept				
GROSS AREA: 25950 SF		10/15/2018		
COST SUMMARY - 2020 HILTON STANDARDS ROOM RENOVATION				
DESCRIPTION	TOTAL COST	RATE/SF	% of Total	
06 - INTERIOR CONSTRUCTION	\$1,641,049	\$63.24	8%	
061 - Partitions - New Drywall where required	\$291,678	\$11.24		
062 - Interior Finishes - Floors, Ceilings, Wall Finishes	\$778,471	\$30.00		
063 - Specialties - Toilet Acc., Wayfinding, FP Specialties	\$311,400	\$12.00		
064 - Interior Demo	\$259,500	\$10.00		
08 - MECHANICAL	\$389,250	\$15.00	2%	
081 - Plumbing - Distribution as Required	\$129,750	\$5.00		
082 - HVAC - Distribution as Required	\$207,600	\$8.00		
083 - Fire Protection - Distribution as Required	\$51,900	\$2.00		
09 - ELECTRICAL	\$539,501	\$20.79	2%	
091 - Service & Distribution - Distribution as Required	\$280,001	\$10.79		
092 - Lighting & Power - Distribution as Required	\$129,750	\$5.00		
093 - Special Systems - Distribution as Required	\$129,750	\$5.00		
10 - EQUIPMENT	\$ 155,700	\$6.00	0%	
102 - Furnishings - Built-in Cabinetry Only	\$155,700	\$6.00		
12 - COST OF WORK	\$ 2,725,500	\$105.03	13%	
13 - PROJECT MARKUPS - PER UH	\$1,276,758	\$49.20	6%	
131 - GC Fees + Conditions - 10%	\$303,990			
TOTAL PROJECT CONSTRUCTION COST	\$ 4,002,258	\$ 154.23		

PARAMETER COSTING MODEL				
Project UH Hilton Concept				
GROSS AREA: 6800 SF		11/26/2018		
COST SUMMARY - SITE IMPROVEMENTS				
DESCRIPTION	TOTAL COST	RATE/SF	% of Total	
11 - SITE COSTS	\$162,500	\$23.90	70%	
110 - Sitework/Demo for Site Plaza	\$20,400	\$3.00		
111 - Site Improvements	\$114,900	\$17.00		
112 - Landscape and Irrigation	\$27,200	\$4.00		
12 - COST OF WORK	\$162,500	\$23.90	70%	
13 - PROJECT MARKUPS - PER UH	\$68,250	\$10.04	30%	
131 - GC Fees + Conditions - 10%	\$16,250	\$0.25		
132 - CMAR Fee - 5%	\$8,125	\$0.13		
133 - Design Contingency - 5%	\$8,125	\$0.13		
134 - Escalation - 6%	\$9,750	\$0.15		
135 - Fees/Soft Costs - 10%	\$16,250	\$0.25		
136 - Owner Contingency - 6%	\$9,750	\$0.15		
TOTAL PROJECT CONSTRUCTION COST	\$230,750	\$33.93		

**UH Hilton Hotel
Financial Forecast**

Year	2022	2023	2024	2025	2026
Number of Available Rooms	150	150	150	150	150
Annual Occupancy	64%	66%	68%	68%	68%
Average Daily Rate	\$160	\$163	\$166	\$170	\$173
Revenue Per Available Room	\$102	\$108	\$113	\$115	\$118

	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio	Amount	Ratio
Revenues										
Rooms	\$5,606,000	56.0%	\$5,897,000	55.8%	\$6,197,000	55.6%	\$6,321,000	55.3%	\$6,448,000	55.1%
Food & Beverage	\$3,609,000	36.1%	\$3,834,000	36.3%	\$4,068,000	36.5%	\$4,190,000	36.7%	\$4,316,000	36.9%
Other Operated Departments	<u>\$788,000</u>	<u>7.9%</u>	<u>\$837,000</u>	<u>7.9%</u>	<u>\$889,000</u>	<u>8.0%</u>	<u>\$915,000</u>	<u>8.0%</u>	<u>\$943,000</u>	<u>8.1%</u>
Total Revenues	\$10,003,000	100.0%	\$10,568,000	100.0%	\$11,154,000	100.0%	\$11,426,000	100.0%	\$11,707,000	100.0%
Departmental Expenses										
Rooms	\$1,458,000	26.0%	\$1,474,000	25.0%	\$1,487,000	24.0%	\$1,517,000	24.0%	\$1,548,000	24.0%
Food & Beverage	\$2,815,000	78.0%	\$2,952,000	77.0%	\$3,092,000	76.0%	\$3,184,000	76.0%	\$3,280,000	76.0%
Other Operated Departments	<u>\$79,000</u>	<u>10.0%</u>	<u>\$84,000</u>	<u>10.0%</u>	<u>\$89,000</u>	<u>10.0%</u>	<u>\$92,000</u>	<u>10.1%</u>	<u>\$94,000</u>	<u>10.0%</u>
Total Departmental Expenses	\$4,352,000	43.5%	\$4,510,000	42.7%	\$4,668,000	41.9%	\$4,793,000	41.9%	\$4,922,000	42.0%
Departmental Profit	\$5,651,000	56.5%	\$6,058,000	57.3%	\$6,486,000	58.1%	\$6,633,000	58.1%	\$6,785,000	58.0%
Undistributed Expenses										
Administrative & General	\$1,000,000	10.0%	\$1,057,000	10.0%	\$1,115,000	10.0%	\$1,143,000	10.0%	\$1,171,000	10.0%
Sales & Marketing	\$400,000	4.0%	\$423,000	4.0%	\$446,000	4.0%	\$457,000	4.0%	\$468,000	4.0%
Property Operation and Maintenance	\$600,000	6.0%	\$634,000	6.0%	\$669,000	6.0%	\$686,000	6.0%	\$702,000	6.0%
Utility Costs	\$500,000	5.0%	\$528,000	5.0%	\$558,000	5.0%	\$571,000	5.0%	\$585,000	5.0%
Information & Telecommunications Systems	<u>\$100,000</u>	<u>1.0%</u>	<u>\$106,000</u>	<u>1.0%</u>	<u>\$112,000</u>	<u>1.0%</u>	<u>\$114,000</u>	<u>1.0%</u>	<u>\$117,000</u>	<u>1.0%</u>
Total Undistributed Operating Expenses	\$2,600,000	26.0%	\$2,748,000	26.0%	\$2,900,000	26.0%	\$2,971,000	26.0%	\$3,043,000	26.0%
Gross Operating Profit	\$3,051,000	30.5%	\$3,310,000	31.3%	\$3,586,000	32.1%	\$3,662,000	32.0%	\$3,742,000	32.0%
Fixed Expenses										
Other	<u>\$125,000</u>	<u>1.2%</u>	<u>\$129,000</u>	<u>1.2%</u>	<u>\$133,000</u>	<u>1.2%</u>	<u>\$137,000</u>	<u>1.2%</u>	<u>\$141,000</u>	<u>1.2%</u>
Total Fixed Expenses	\$125,000	1.2%	\$129,000	1.2%	\$133,000	1.2%	\$137,000	1.2%	\$141,000	1.2%
Net Operating Income Before Reserve	\$2,926,000	29.3%	\$3,181,000	30.1%	\$3,453,000	31.0%	\$3,525,000	30.9%	\$3,601,000	30.8%
FF&E Reserve	\$100,000	1.0%	\$211,000	2.0%	\$335,000	3.0%	\$343,000	3.0%	\$351,000	3.0%
Net Operating Income After Reserve	\$2,826,000	28.3%	\$2,970,000	28.1%	\$3,118,000	28.0%	\$3,182,000	27.8%	\$3,250,000	27.8%
Capital Renewal Reserve	\$243,000	2.4%	\$365,000	3.5%	\$486,000	4.4%	\$486,000	4.3%	\$486,000	4.2%
Net Operating Income After Capital Renewal Reserve	\$2,583,000	25.8%	\$2,605,000	24.6%	\$2,632,000	23.6%	\$2,696,000	23.6%	\$2,764,000	23.6%

**UH Hilton Hotel
Financial Forecast**

Year	2027	2028	2029	2030	2031
Number of Available Rooms	150	150	150	150	150
Annual Occupancy	68%	68%	68%	68%	68%
Average Daily Rate	\$177	\$180	\$184	\$187	\$191
Revenue Per Available Room	\$120	\$123	\$125	\$127	\$130

	Amount	Ratio								
Revenues										
Rooms	\$6,577,000	54.8%	\$6,708,000	54.6%	\$6,842,000	54.4%	\$6,979,000	54.1%	\$7,119,000	53.9%
Food & Beverage	\$4,445,000	37.1%	\$4,579,000	37.3%	\$4,716,000	37.5%	\$4,858,000	37.7%	\$5,003,000	37.9%
Other Operated Departments	\$971,000	8.1%	\$1,000,000	8.1%	\$1,030,000	8.2%	\$1,061,000	8.2%	\$1,093,000	8.3%
Total Revenues	\$11,993,000	100.0%	\$12,287,000	100.0%	\$12,588,000	100.0%	\$12,898,000	100.0%	\$13,215,000	100.0%
Departmental Expenses										
Rooms	\$1,578,000	24.0%	\$1,610,000	24.0%	\$1,642,000	24.0%	\$1,675,000	24.0%	\$1,709,000	24.0%
Food & Beverage	\$3,378,000	76.0%	\$3,480,000	76.0%	\$3,584,000	76.0%	\$3,692,000	76.0%	\$3,802,000	76.0%
Other Operated Departments	\$97,000	10.0%	\$100,000	10.0%	\$103,000	10.0%	\$106,000	10.0%	\$109,000	10.0%
Total Departmental Expenses	\$5,053,000	42.1%	\$5,190,000	42.2%	\$5,329,000	42.3%	\$5,473,000	42.4%	\$5,620,000	42.5%
Departmental Profit	\$6,940,000	57.9%	\$7,097,000	57.8%	\$7,259,000	57.7%	\$7,425,000	57.6%	\$7,595,000	57.5%
Undistributed Expenses										
Administrative & General	\$1,199,000	10.0%	\$1,229,000	10.0%	\$1,259,000	10.0%	\$1,290,000	10.0%	\$1,322,000	10.0%
Sales & Marketing	\$480,000	4.0%	\$491,000	4.0%	\$504,000	4.0%	\$516,000	4.0%	\$529,000	4.0%
Property Operation and Maintenance	\$720,000	6.0%	\$737,000	6.0%	\$755,000	6.0%	\$774,000	6.0%	\$793,000	6.0%
Utility Costs	\$600,000	5.0%	\$614,000	5.0%	\$629,000	5.0%	\$645,000	5.0%	\$661,000	5.0%
Information & Telecommunications Systems	\$120,000	1.0%	\$123,000	1.0%	\$126,000	1.0%	\$129,000	1.0%	\$132,000	1.0%
Total Undistributed Operating Expenses	\$3,119,000	26.0%	\$3,194,000	26.0%	\$3,273,000	26.0%	\$3,354,000	26.0%	\$3,437,000	26.0%
Gross Operating Profit	\$3,821,000	31.9%	\$3,903,000	31.8%	\$3,986,000	31.7%	\$4,071,000	31.6%	\$4,158,000	31.5%
Fixed Expenses										
Ground Lease	\$145,000	1.2%	\$149,000	1.2%	\$154,000	1.2%	\$158,000	1.2%	\$163,000	1.2%
Total Fixed Expenses	\$145,000	1.2%	\$149,000	1.2%	\$154,000	1.2%	\$158,000	1.2%	\$163,000	1.2%
Net Operating Income Before Reserve	\$3,676,000	30.7%	\$3,754,000	30.6%	\$3,832,000	30.4%	\$3,913,000	30.3%	\$3,995,000	30.2%
FF&E Reserve	\$360,000	3.0%	\$369,000	3.0%	\$378,000	3.0%	\$387,000	3.0%	\$396,000	3.0%
Net Operating Income After Reserve	\$3,316,000	27.6%	\$3,385,000	27.5%	\$3,454,000	27.4%	\$3,526,000	27.3%	\$3,599,000	27.2%
Capital Renewal Reserve	\$486,000	4.1%	\$486,000	4.0%	\$486,000	3.9%	\$486,000	3.8%	\$486,000	3.7%
Net Operating Income After Capital Renewal Reserve	\$2,830,000	23.6%	\$2,899,000	23.6%	\$2,968,000	23.6%	\$3,040,000	23.6%	\$3,113,000	23.6%

UH HILTON EXPANSION - DEBT SERVICE COVERAGE

SOURCE AND USE OF FUNDS

Hotel Expansion Costs	\$30,400,000	First Mortgage	\$30,400,000	100.0%		
-----------------------	--------------	----------------	--------------	--------	--	--

FIRST MORTGAGE

Mortgage Amount	\$30,400,000	Monthly Payment	\$179,746
Interest Rate	5.00%	Annual Payment	\$2,156,955
Amortization Period	25 years		

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Beginning Balance	\$30,400,000	\$29,003,045	\$28,296,243	\$27,554,100	\$26,774,851	\$25,956,638	\$25,097,516	\$24,195,437	\$23,248,254	\$22,253,712
Annual Payment	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955
Portion to Interest	\$760,000	\$1,450,152	\$1,414,812	\$1,377,705	\$1,338,743	\$1,297,832	\$1,254,876	\$1,209,772	\$1,162,413	\$1,112,686
Portion to Principal	\$1,396,955	\$706,802	\$742,143	\$779,250	\$818,212	\$859,123	\$902,079	\$947,183	\$994,542	\$1,044,269
Ending Balance	\$29,003,045	\$28,296,243	\$27,554,100	\$26,774,851	\$25,956,638	\$25,097,516	\$24,195,437	\$23,248,254	\$22,253,712	\$21,209,443

YEARLY CASH FLOW SUMMARY

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Net Operating Income	\$2,583,000	\$2,605,000	\$2,632,000	\$2,696,000	\$2,764,000	\$2,830,000	\$2,899,000	\$2,968,000	\$3,040,000	\$3,113,000
First Mortgage Annual Payment	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955	\$2,156,955
Cash Flow after Debt Service	\$ 426,045	\$448,045	\$475,045	\$539,045	\$607,045	\$673,045	\$742,045	\$811,045	\$883,045	\$956,045
Debt Service Coverage	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4

6 | ACKNOWLEDGEMENTS

Thank you to Dean Reynolds for his leadership of the process, providing the access to Hilton College facility, Faculty and Staff.

Additional thanks to UH Facilities Design and Construction, Sr. Facilities Planner Jennifer McPhail, Executive Director of Facilities Planning Christa Rieck, University Architect Jim Taylor and Patrick Peters of the DesignLab in the Hines College of Architecture and Design among the many stakeholders offered who their time and attention.

END OF DOCUMENT