

## Lloyd George Sealy Library Feasibility Study



December 2017



2 EXECUTIVE SUMMARY

2

EXISTING BUILDING ANALYSIS

3 EXISTING LIBRARY ANALYSIS

4 PROGRAM ASSESSMENT

## ō

CONCEPTUAL APPROACH

6 PHASING

# **7**

## 8

APPENDIX:

- 8.1 STRUCTURAL REPORT
- 8.2 MEP/FP REPORT
- 8.3 DETAILED EXISTING COLLECTION ANALYSIS
- 8.4 PROPOSED LIBRARY ENTRY SEQUENCE
- 8.5 COST ESTIMATE DRAWINGS

1 EXECUTIVE SUMMARY

#### EXECUTIVE SUMMARY



Rendered view of the Lloyd George Sealy Library from Haaren Hall's 10th Avenue entry atrium.

THE LLOYD GEORGE SEALY LIBRARY renovation at John Jay College for the City University of New York is a complete programmatic and physical transformation of the existing 67,000 square foot library. Located at 10th Avenue between 58th and 59th Streets, the library occupies the entry and cellar levels of Haaren Hall.

The renovation transforms the physical and pedagogical structure of the library from a traditional collection storage and reading space library into a modern learning commons. The transformation continues to allow intensive single scholarship, but now also provides for more collaborative and casual learning with greater access to technology. Reader seats have increased from 537 seats to 784 seats. Most importantly, the renovation provides for a greater variety of user study space, significantly increasing soft, collaborative, technology and group seating areas. The increase in user space is available, within the confines of the existing building, because the renovation significantly revises collection management. Portions of the collection are heavily weeded and the majority of the remaining collection will be accessed via compact mobile storage. Collection management has accommodated 20 years of projected growth.

Physically, the renovation changes the front door location of the library. The new entrance to the library will be on the west side of Haaren Hall opening directly into John Jay Commons. This new library entrance will provide a highly visible and universally accessible entrance to the learning commons. Taking advantage of the historic arched window configuration, the renovation will include the replacement of the perimeter exterior windows on the entry and cellar levels of Haaren Hall. The new windows and a higher ceiling above the apex of the arch will provide a gracious and well lit interior space for the learning commons.

2 EXISTING BUILDING ANALYSIS



#### John Jay College Campus Section.

Lloyd George Sealy Library



Haaren Hall originally housed the DeWitt Clinton High School in Manhattan when it was built in 1906.

Haaren Hall is composed of two separate, connected structures: the original 1906 Dewitt Clinton High School building designed by architect Charles B. J. Snyder and the 1990 addition by Rafael Vinoly Architects. The 1990 addition included a complete interior renovation and partial reconstruction of portions of the 1906 DeWitt Clinton High School. The addition and the renovated DeWitt Clinton High School now make up Haaren Hall with a main entrance off 10th Avenue. In 2007, a large new academic complex was designed and constructed by SOM with a new entrance off 59th Street.

The academic complex extents west from Haaren Hall to 11th Avenue. The 1990 renovation included a two-story atrium in the middle of Haaren Hall. The atrium serves as an entry lobby collecting people entering from 10th Avenue at entry level and moves them down escalators and stairs to the cellar level where a central promenade connects them through the midblock to 11th Avenue. The Haaren Hall Atrium bisects the floor plate of the existing library spatially creating a floor plan arrangement on both levels that is shaped like the letter 'C' and is not contiguous.

The center of Haaren Hall contains an elevator, restroom and a mechanical core that serves all floors of the Haaren Hall, except the library. This core is accessed from the central promenade on the cellar level and serves the floor below (the subcellar level) and floors two through six above. Handicap access to Haaren Hall is facilitated by a ramp on 10th Avenue that allows access to the entry level lobby. An elevator in the northeast corner of the lobby permits handicap access to the cellar and entry levels of the library.

## EXISTING BUILDING ANALYSIS EXISTING ENTRY LEVEL PLAN & PHOTOS



#### Existing Entry Level Floor Plan.

Outside of Renovation Scope



View of the Haaren Hall Entry Atrium.



View of the double-height Reading Room north of the Atrium.



View of the double-height Computer Lab south of the Atrium.



View of Technical Services offices and workspace.



View of General Collection stacks.

EXISTING BUILDING ANALYSIS EXISTING CELLAR LEVEL PLAN & PHOTOS



#### Existing Cellar Level Floor Plan.

Outside of Renovation Scope



View of the Haaren Hall Entry Atrium.

3 EXISTING LIBRARY ANALYSIS



Exterior view of Haaren Hall after the 1990 Rafael Vinoly Architects renovation and addition.

The existing interior of the library is dominated by bookstacks housing the collection. Approximately 80% of the floor plate is occupied by traditional stacks, many are shelved only five high in the middle of the stack for ease of access. The bookstacks line the perimeter of the building blocking patrons' access to light and views, thereby making a dark and inward-looking environment. On either side of the Haaren Hall Atrium are two double height reading rooms; one for general reading and the other for computer workstations. These are the primary student spaces in the library.

Adjacent to the atrium are two large masonry cores that support the exterior facades above the second floor and portions of the cellar, entry and second floor / roof levels. These masonry cores block visual and physical access to the north and south wings of the entry level of the library. These structural masonry cores prevent the existing library floor plan open and collaborative access. The suggested conceptual arrangement for the renovation of the library suggests elimination of these structural cores (see the structural feasibility report in the appendix of this book). With these structural masonry cores eliminated, the library floor plan will be more unified and contiguous, allowing for better collaboration and servicing of patrons from one or two service points on the floor.

The existing entrance to the library is located on the cellar level beneath the 10th Avenue entrance lobby. The location is hidden and difficult to find. Additionally, the main program spaces of the library and most of the collection is located on the entry level, a floor above, which makes access through the library circuitous and confusing. Currently, there is no access from the main academic building to the west of Haaren Hall. This is where the majority of students, faculty and staff are located. It would make good planning sense to consider the library entrance address a main level of the main academic program space. The floor levels of Haaren Hall and the 2007 main academic building do not align on every level. There is a two-foot difference in elevation between the entry level of Haaren Hall and the second floor level of the 2007 academic building. An entrance at the main level for the renovated library would need to address this two-foot difference and would have to accommodate handicap and universal access to the library (see the Proposed Entry Level Organization Study, Option 1 in this section).

## EXISTING LIBRARY ANALYSIS EXISTING LIBRARY ANALYSIS DIAGRAMS & PHOTOS



#### Existing Cellar Level Plan.

Outside of Renovation Scope

••••• Existing Library Entry Sequence



Interior views of existing cellar level exterior windows after the 1990 Rafael Vinoly Architects renovation and addition.

## EXISTING LIBRARY ANALYSIS EXISTING LIBRARY ANALYSIS DIAGRAMS & PHOTOS



Outside of Renovation Scope

••••• Existing Library Entry Sequence



Interior and exterior views of existing entry level exterior windows after the 1990 Rafael Vinoly Architects renovation and addition.

## EXISTING LIBRARY ANALYSIS EXISTING LIBRARY ANALYSIS DIAGRAMS



Outside of Renovation Scope

## EXISTING LIBRARY ANALYSIS EXISTING LIBRARY ANALYSIS DIAGRAMS



Outside of Renovation Scope



Existing Building Section though the Haaren Hall Entry Atrium, Library, and John Jay Commons.



Existing Building Section at the new library entrance location.

View of the location of the new library entrance onto the John Jay Commons.



View of the location of the new Library Entrance from the cellar level of the John Jay Commons.



View of the location of the new Library Entrance from the entry level of the John Jay Commons.

## EXISTING LIBRARY ANALYSIS PROPOSED LIBRARY ORGANIZATIONAL DIAGRAMS



#### Proposed Entry Level Organization Study, OPTION 2.

The plan is arranged around a new Library Entry Bridge connecting the 10th Avenue Entrance to the main level of the library.

## EXISTING LIBRARY ANALYSIS PROPOSED LIBRARY ORGANIZATIONAL DIAGRAMS



#### Proposed Entry Level Organization Study, OPTION 1.

The plan is arranged around a new Library Entry connecting the main level of the library to the John Jay Commons to the west.

4 PROGRAM ASSESSMENT

## PROGRAM ASSESSMENT EXISTING COLLECTION ANALYSIS



### PROGRAM ASSESSMENT EXISTING COLLECTION ANALYSIS



Rendered view of the Reference Reading wing of the Learning Commons showing a variety of work spaces.

The existing collection occupies more than 85% of the available floor area of the current library. Collection stacks line the perimeter of the floor plate preventing user access to views and daylight. The majority of the collection occupies the main entry level of the library and house general collection, lay reference collection, general reference collection, bound periodicals and special collections. The remainder of the collection is housed on the cellar level and contains the general collection, the media collection, and the reserve and special collections.

On order to renovate and to transform the library into a contemporary learning commons with a variety of seating, access to technology and new program spaces for the patrons, a reconceptualization is required for collection management. Simply put, the collection must be drastically reduced, and its growth controlled for the next 20 years in order to allow growth of user spaces. This is achievable by significantly weeding underutilized collection and collection readily available online, while keeping growth as perf the current increase percentage per year (see Detailed Collection Analysis Worksheet in this section, dated June 7, 2017 and updated June 28, 2017, for planning assumptions based on current librarians collection management). Also, it is imperative that the majority of the collection be stored in compact mobile high density units to free up floor space for user seating.

In summary, the overall collection will shrink, and the majority of the collection will be stored on open compact high density storage accessible to the patrons. The overall current collection is approximately 342,150 volumes. The proposed program reduces the overall collection to 273,350 volumes (including growth as per current rate for the next 20 years). The general and reference collections are generally reduced in size, but the open and special collection will increase. John Jay Library has become (unofficially) a repository for criminal justice materials. These materials are often sent to the special collections section of the library for processing and filing. Currently, some of the special collections are stored off site at a protected warehouse. This program assumes storage of all current on and off site special collection as well as sustained growth for the next 20 years all in the renovated library (see the chart on the opposite page for actual collection sizes).

## PROGRAM ASSESSMENT EXISTING CELLAR LEVEL COLLECTION PLAN



## PROGRAM ASSESSMENT EXISTING ENTRY LEVEL COLLECTION PLAN



## PROGRAM ASSESSMENT EXISTING SEATING ANALYSIS



## PROGRAM ASSESSMENT EXISTING SEATING ANALYSIS



Rendered view of computer workstations and group study rooms in the proposed Learning Commons.

The overall reduction in the collection size and its highdensity storage will permit a dramatic increase in user seating and variety. This increase in quality and variety of user seating is the single most important item that will transform the user experience of the library. The current library offers 537 user seats (3% of the student population) in mostly 4seat reader tables and computer workstations. There are currently no group study, collaborative or soft seating venues in the library. The proposed program increases the user seating to 784 user seats (5% of the student population) with a grater variety in seating type; offering group study, soft lounge and collaborative study venues (see the chart on the opposite page for actual seats).

## PROGRAM ASSESSMENT EXISTING CELLAR LEVEL SEATING PLAN



## PROGRAM ASSESSMENT EXISTING ENTRY LEVEL SEATING PLAN



Existing Entry Level Seating Plan.

Outside of Renovation Scope



PROPOSED PROGRAM

PROGRAM ASSESSMENT

PROGRAM ASSESSMENT
PROPOSED PROGRAM SUMMARY



## PROGRAM ASSESSMENT PROPOSED PROGRAM



Rendered view of the Learning Commons showing computer workstations and group study rooms beyond.

The proposed program transforms John Jay College library from a traditional reader / collection storage library focused on single scholarship into a contemporary library learning commons. This transformation comes through the change in collection management and the inclusion of new programs spaces such as: group study rooms, collaborative work areas, technology workstations. The learning commons is established by immersing the reference librarians and the tech help desk within collocated collaborative work activities and program spaces; such as technology workstations (single and double user); collaborative work tables, group study rooms, classrooms and the reference collection. This will make for a lively dynamic work environment in the learning commons.

To support the more traditional single scholarship user, we have programmed quiet reading areas for focused study and introspection. In support of offering a more popular collection, we have proposed a browsing collection for new books and periodicals, popular collection material and faculty publications. Additionally we have programed a small vending café area recognizing the great demand for access to food and drink while working.

PROGRAM ASSESSMENT						
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	EXISTING PROGRAM		PROPOSED PROGRAM			
I.	LIBRARY ENTRANCE	I.	LIBRARY ENTRANCE			
0.	ACCESS SERVICES	н.	CAFÉ PARLOR			
III.	REFERENCE SERVICES	ш.	ACCESS SERVICES			
IV.	GENERAL COLLECTION & USER AREA	IV.	LEARNING COMMONS			
<b>V</b> .	SPECIAL COLLECTIONS & USER AREA	<b>V</b> .	BROWSING LIBRARY			
VI.	OPEN COMPUTER LAB	VI.	REFERENCE READING			
	$\bigwedge \setminus$					
VII.	CLASSROOM / INFORMATION LITERACY	VII.	QUIET READING AREA			
VIII.	LIBRARY OFFICES / SUPPORT	VIII.	COMPACT MOBILE STOR			
IX.	ADDITIONAL SUPPORT SPACE	XI.	SPECIAL COLLECTIONS			
		Х.	STAFF / ADMINISTRATION			
		XI.	GENERAL SUPPORT			

## PROGRAM ASSESSMENT PROPOSED DETAILED PROGRAM CHART

ROOM	QUANTITY	NSF	TOTAL NSF	SEATS	NOTES		
LIBRARY ENTRANCE							
Lobby / Display Gallery	• (1)	(250 SF)	250 SF		<ul> <li>Digital display of the Lloyd Sealy story</li> <li>Digital display of faculty work / Display of faculty books</li> </ul>		
Soft Seating	• (1)	(250 SF)	250 SF	10 SEATS			
Library Book Security	• (1)						
Library Security Guard Station	• (1)						
SUB-TOTAL for	CE:	500 NSF	10 SEATS				

## CAFÉ PARLOR

Café Parlor	• (1)	(250 SF)	250 SF	- Vending machines - Microwave, counter, sink - Coffee machine - Café seating
SUB-TOTAL for CAFÉ PARLOR:			250 NSF	

#### ACCESS SERVICES

Circulation Desk	• (1)	(650 SF)	650 SF	<ul> <li>[2] service positions at desk</li> <li>[1] workstation behind desk</li> <li>Sensitize / desensitize</li> <li>Cash box</li> <li>Book return</li> <li>Self-checkout station</li> <li>[6] Book carts (storage)</li> <li>ILL shelving (24 linear ft)</li> <li>[3] lateral files</li> </ul>
Circulation Supervisor Office	• (1)	(100 SF)	100 SF	
Reserve Desk	• (1)	(250 SF)	250 SF	- [2] service positions at desk - Sensitize / desensitize
Reserve Collection	• (1)	(550 SF)	550 SF	- [5200] volumes, [15] double-faced shelves
Media / AV Collection	• (1)	(250 SF)	250 SF	- [16] cabinets

1800 NSF

## PROGRAM ASSESSMENT PROPOSED DETAILED PROGRAM CHART

ROOM	QUANTITY	NSF	TOTAL NSF	TOTAL SEATS	NOTES	
LEARNING COMMONS						
Reference Desk / Information	• (1)	(200 SF)	200 SF		<ul> <li>- [2] service positions at desk (sit down, with patron pull up)</li> <li>- [18] linear ft ready reference behind desk, with cabinet storage and printing</li> <li>- Atlas</li> </ul>	
Tech Help Desk	• (1)	(100 SF)	100 SF		- [1] service position at desk (sit down, with patron pull up)	
Ready Reference Collection	• (1)	(30 SF)	30 SF		- [500] volumes, [2] double-faced shelves	
Microform Reader Stations	• • (2)	(25 SF)	50 SF	2 SEATS		
Scan / Print Room	• (1)	(150 SF)	150 SF		- [4] scanners at workstations - [4] printers - [2] copiers	
Computer Workstations	• (1)	(7000 SF)	7000 SF	200 SEATS	- Distributed in sections, with a variety of seating	
Reading / Study Seating: 4-Person Tables	• (1)	(1800 SF)	1800 SF	60 SEATS		
Reading / Study Seating: Study Carrels	• (1)	(450 SF)	450 SF	10 SEATS		
Reading / Study Seating: Soft Seating	• (1)	(1050 SF)	1050 SF	30 SEATS		
Reading / Study Seating: Genius Bar	• (1)	(900 SF)	900 SF	20 SEATS		
Collaborative Seating	• (1)	(1600 SF)	1600 SF	40 SEATS	- [2] people working collaboratively at a single surface	
Small Group Study Rooms	• • • • • (10)	(154 SF)	1540 SF	40 SEATS	- [4-6] person rooms	
Large Group Study Rooms	• • (2)	(192 SF)	384 SF	16 SEATS	- [8-12] person rooms	
Information Literacy Classroom	• (1)	(1000 SF)	1000 SF	40 SEATS		
ROOM	QUANTITY	UANTITY NSF		SEATS	NOTES	
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Maker Space	• (1)	(400 SF)	400 SF	10 SEATS	- [4] soft seats, [6] bench seats - Large format plotter - 3d printer - Printers	
SUB-TOTAL for	LEARNING COMM	ONS:	16,654 NSF	468 SEATS		

#### BROWSING LIBRARY

Browsing Collection	• (1)	(168 SF)	168 SF		- [350] volumes, [3] double-faced shelves - [36] periodical titles in display tilt
Soft Seating	• (1)	(700 SF)	700 SF	20 SEATS	
Table Seating	• (1)	(480 SF)	480 SF	16 SEATS	
SUB-TOTAL for	BROWSING LIBRA	RY:	1348 NSF	36 SEATS	

#### REFERENCE READING AREA

General Reference Collection	• (1)	(1500 SF)	1500 SF		- [20,000] volumes, [67] double-faced shelves - [4] on-line catalog terminals
Open Special Collection	• (1)	(1000 SF)	1000 SF		- [14,000] volumes, [40] double-faced shelves
Law Reference Collection	• (1)	(720 SF)	720 SF		- [8,100] volumes, [32] double-faced shelves in open shelving
Reading / Study Seating: 4-Person Tables	• (1)	(1800 SF)	1800 SF	60 SEATS	
Reading / Study Seating: Study Carrels	• (1)	(450 SF)	450 SF	10 SEATS	
Reading / Study Seating: Soft Seating	• (1)	(1050 SF)	1050 SF	30 SEATS	
Small Group Study Rooms	• • • • • (5)	(154 SF)	770 SF	20 SEATS	- [4-6] person rooms
SUB-TOTAL for	NG AREA:	1800 NSF	120 SEATS		

ROOM	QUANTITY	NSF	TOTAL NSF	TOTAL SEATS	NOTES
QUIET READING ROOM					
Quiet Reading Room Seating: 4-Person Tables	• (1)	(600 SF)	600 SF	20 SEATS	
Quiet Reading Room Seating: Study Carrels	• (1)	(900 SF)	900 SF	20 SEATS	
Seminar Room	• (1)	(500 SF)	500 SF	20 SEATS	- Expandable into Quiet Reading Room
SUB-TOTAL for	QUIET READING R	OOM:	250 NSF		
COMPACT MOBILE STORA	GE				
General Collection	• (1)	(5343 SF)	5343 SF		<ul> <li>- [200,000] volumes, [570] double-faced shelves in compact shelving</li> <li>- [4] on-line catalog terminals</li> </ul>
Bound Periodicals Collection	• (1)	(1000 SF)	1000 SF		- [30,000] volumes, [100] double-faced shelves
Microforms	• (1)	(200 SF)	200 SF		- [29] cabinets
General Collection Seating: 4-Person Tables	• (1)	(1200 SF)	1200 SF	40 SEATS	
General Collection Seating: Study Carrels	• (1)	(900 SF)	900 SF	20 SEATS	
General Collection Seating: Soft Seating	• (1)	(1050 SF)	1050 SF	30 SEATS	
SUB-TOTAL for	COMPACT MOBILE	STORAGE:	9,693 NSF	90 SEATS	

#### SPECIAL COLLECTIONS

New Reading Room	• (1)	(2450 SF)	2450 SF	12 SEATS	- [1] Special Collections Librarian's office - [12] reader seats - Display and storage
Closed Special Collections	• (1)	(1588 SF)	1588 SF		<ul> <li>- [4127] linear ft, [115] double-faced shelves</li> <li>- Lateral files, microforms, etc.</li> <li>- Police Blotters: [500] linear ft, [14] double-faced shelves</li> </ul>
SUB-TOTAL for SPECIAL COLLECT		IONS:	4038 NSF	12 SEATS	

ROOM	QUANTITY	NSF	TOTAL NSF	SEATS	NOTES				
STAFF AREAS	STAFF AREAS								
Administration Reception Workstation	• (1)	(100 SF)	100 SF						
Administration Offices	• (12)	(120 SF)	1440 SF						
Administration Workroom for Adjunct Faculty	• (1)	(150 SF)	150 SF		- [2] workstations - Lockers				
Administration Storage	• (1)	(100 SF)	100 SF		- Lockable file storage room				
Technical Services Offices	• • • • (4)	(120 SF)	480 SF						
Technical Services Workstations	• • • • • (10)	(64 SF)	640 SF						
Technical Services Storage and Process Shelving	• (1)	(1000 SF)	1000 SF		- Lateral files, catalogs, etc. - Cart storage				
IT Office	• (1)	(120 SF)	120 SF						
IT Workstations	• • • (3)	(64 SF)	192 SF						
IT Workroom	• (1)	(100 SF)	100 SF		- Utility shelving - Configuring worksurface				
Shared Staff Workroom	• (1)	(100 SF)	100 SF		- Copiers, printers, supplies				
Shared Staff Conference Room	• (1)	(300 SF)	300 SF		- [12-15] person room				
Shared Staff Kitchenette	• (1)	(120 SF)	120 SF		- Counter, sink, refrigerator, microwave - Table for [4-6] people				
Staff Hoteling Room	• (1)	(50 SF)	50 SF		- [20] half-height lockers				
SUB-TOTAL for									

ROOM	QUANTITY	NSF	TOTAL NSF	TOTAL SEATS	NOTES
GENERAL SUFFORT					
Library IT Server Room	• (1)	(150 SF)	150 SF		
General Storage	• (1)	(300 SF)	300 SF		
SUB-TOTAL for	GENERAL SUPPOR	RT:	450 NSF		

TOTAL GROSS SQUARE FEET:	48,915 NSF x	(1.4)	= 68,481 GSF
PROGRAM TOTAL:	48,915 NSF	796 SEATS	
	TOTAL NSF	TOTAL SEATS	

#### PROGRAM ASSESSMENT PROPOSED PROGRAM BLOCKS



5 CONCEPTUAL APPROACH

#### CONCEPTUAL APPROACH



Rendered view of the new Lloyd George Sealy Library entrance off of the John Jay Commons.

Based on our analysis of the existing conditions and the proposed program, we explored two conceptual approached for the renovation of the Lloyd George Sealy Library. Exploration 1 reconfigures the entire floor plate of the library and places the library entry to the west off of the new John Jay College Academic building and commons. Exploration 2 maintains the library entry off the 10th Avenue Entry of Haaren Hall; except the entrance has been relocated to the entry level, not the cellar level as is the current case. Exploration 1 is the preferred approach, because it re-orients the library toward the main academic building where the majority of students and faculty are located (see the blocking and stacking diagrams on the following pages). The John Jay Commons ("Jay Walk") have major program spaces located off this large open commons space, such as the auditorium, student activities, major classrooms, etc. It makes good planning sense to locate the new entrance of the library off of the John Jay Commons just like one of the other major college program spaces. The 2007 main academic building shifted the activities of the college significantly, and the library entrance should acknowledge that shift.

Following the arrangement of blocking and stacking exploration 1, the conceptual floor plans illustrate a complete gut and reconstruction of the entry and cellar levels of the existing library. The program is deployed between these floors to create a dynamic synergy of productive collisions and work thereby transforming the user experience of the learning commons. In order for this plan to be manifest a number of task must first be satisfied. The masonry core towers holding up the exterior building façade above the second floor must be supported and permanently removed (see the structural report in the appendix of this book). Also, new infrastructure systems must be installed during the renovation to properly heat, cool and ventilate the library floors (see the MEP/ FP report in the appendix).

The floor plan lays out all the major learning commons program components on the entry level and the majority of the collection and support on the cellar level. The attached interior renderings capture the spirit of the interior renovation of durable, sustainable materials. Most importantly, we suggest further exploration during design to test the feasibility of raising the ceiling on the entry level to expose the historic arch windows along the perimeter. CONCEPTUAL APPROACH

#### PROGRAM STACKING, EXPLORATION 2



#### Cellar Level Program Stacking, EXPLORATION 2.

Outside of Renovation Scope

#### CONCEPTUAL APPROACH PROGRAM STACKING, EXPLORATION 1



#### Cellar Level Program Stacking, EXPLORATION 1.

Outside of Renovation Scope



PROPOSED ENTRY LEVEL PLAN Library: 39,790 GSF



PROPOSED CELLAR LEVEL PLAN Library: 26,943 GSF



CONCEPTUAL APPROACH RENDERED VIEW OF THE NEW LIBRARY ENTRY

![](_page_48_Picture_0.jpeg)

CONCEPTUAL APPROACH RENDERED VIEW OF ACCESS SERVICES

![](_page_49_Picture_0.jpeg)

# CONCEPTUAL APPROACH RENDERED VIEW OF THE LEARNING COMMONS

![](_page_50_Picture_0.jpeg)

# CONCEPTUAL APPROACH RENDERED VIEW OF COMPUTER WORKSTATIONS

![](_page_51_Picture_0.jpeg)

# CONCEPTUAL APPROACH RENDERED VIEW OF GROUP STUDY ROOMS

![](_page_52_Picture_0.jpeg)

# CONCEPTUAL APPROACH RENDERED VIEW OF REFERENCE READING

![](_page_53_Picture_0.jpeg)

# CONCEPTUAL APPROACH RENDERED VIEW OF THE CELLAR LEVEL READING ROOM

![](_page_54_Picture_0.jpeg)

6 PHASING

![](_page_56_Picture_1.jpeg)

Rendered view of Access Services, directly adjacent to the library entrance.

The library will remain operational during the construction duration. Also, the project funding is not likely to be available all at one time. Therefore a phasing strategy must be in place to dovetail with funding and library operations. The following plans illustrate a strategy to construct the project in two general phases. The space not under construction during that phase will house temporarily library services for students, faculty and staff. The cost estimate subsequently reflects two separate, sequential phases of the project.

### PHASING EXISTING PLANS, PHASING DIAGRAMS

![](_page_57_Figure_1.jpeg)

Existing Sub-Cellar Level Plan, Phasing Diagram

![](_page_58_Figure_1.jpeg)

![](_page_58_Figure_2.jpeg)

![](_page_58_Figure_3.jpeg)

# PHASING PROPOSED PLANS, PHASING DIAGRAMS

![](_page_59_Figure_1.jpeg)

#### Proposed Cellar Level Plan, Phasing Diagram

Phase 1 Phase 2

Outside of Renovation Scope

#### PHASING PROPOSED PLANS, PHASING DIAGRAMS

![](_page_60_Figure_1.jpeg)

#### Proposed Entry Level Plan, Phasing Diagram

![](_page_60_Picture_3.jpeg)

![](_page_62_Picture_0.jpeg)

Rendered view of the cellar level reading room.

The following feasibility cost estimate is for construction cost associated with the renovation of the Lloyd George Sealy Library at John Jay College. The estimate assumes a two phase construction that is sequential and allows the library to remain open during construction. Diagrams illustrating the phasing and areas of the library to remain operational during construction are illustrated in the previous chapter- Phasing. The estimate also includes escalation to the mid-point of construction and a total duration of construction at 24 months. The estimate is based on annotated architectural floor plans, a detailed structural report and a detailed mechanical, electrical, plumbing and fire protection reports. These drawings and reports are located in the appendix.

# JOHN JAY COLLEGE OF CRIMINAL JUSTICE Haaren Hall - Lloyd Sealy Library 899 10TH AVENUE, NY, NY 10009

# **Feasibility Cost Estimate**

October 11, 2017 rev. Nov.9, 2017

ELLANA Project No: ikon.5-0009

Owner

The City University of New York 899 10th Avenue New York, NY 10009

![](_page_63_Picture_6.jpeg)

	John Ja Haaren	y Colle Hall -	ege Of Crimin Lloyd Sea	al Justice Iy Librar	·у		October	er 11, 2017 rev. Nov.9, 2017		
	F	easibil	ity Cost Estima	ate				ESTIMATE SUMMARY		
BUILDING	G AREA (GSF	)	36,718			35,899			72,617	
			Phase 1	0 //0-	•	Phase 2	0 //05		Total	
		Sub	ototal Trade \$	Cost/SF	%	Subtotal Trade \$	Cost/SF	%	\$	
			260.952	10.07	2.50	255 249	0.00	2.26 ¢	705 000	
			309,002	10.07	2.00	512 071	9.90	3.30 J	725,200	
			1 189 036	32.38	2.07	31 017	0.80	4.00 \$	1 220 953	
SUPERSTRUCTURE			201 03/	7 95	2.04	227 701	6 35	0.30 \$ 2.16 \$	510 725	
			869 760	23 60	6.07	372 240	10.37	2.10 U	1 2/2 000	
			-	20.00	0.07	572,240	10.57	0.02 \$	1,242,000	
			5 715 837	155 67	30.00	3 070 086	110.87	37.66 \$	0 605 823	
SPECIALTIES			33 570	0.01	0.23	7 105	0.20	0.07 \$	3,030,025 40 765	
EQUIPMENT			162 132	1 12	1 13	1,195	0.20	0.07 \$	163 700	
			-		0.00	841 000	23.43	796 \$	841 000	
PLUMBING			273 026	7 44	1 91	41 185	1 15	0.39 \$	314 210	
HVAC			2 035 309	55 /3	1/ 20	1 705 689	1.15	16 1/ \$	3 7/0 998	
			2,000,009	10.48	2.68	369 656	10.30	3 50 \$	754 400	
FLECTRICAL			2 209 230	60 17	15 / 2	2 122 503	59.13	20.08 \$	1 331 823	
			2,203,230	10.49	2.69	2,122,000	-	20.00 \$	385 175	
NEW GENERATOR AT ROOT			505,175	10.43	2.03	-	-	0.00 φ	505,175	
TOTAL DIRECT COST		\$	14,330,240	390.28	100.00	\$ 10,568,239	294.39	100.00 \$	24,898,478	
Phasing and Protection	5%		716,512	9.87		528,412	7.28		1,244,924	
Subtotal		\$	15,046,752	207.21		\$ 11,096,651	152.81	\$	26,143,402	
	/									
Design Contingency	15%	•	2,257,013	31.08		1,664,498	22.92		3,921,510	
Subtotal		\$	17,303,764	238.29		\$ 12,761,148	175.73	\$	30,064,913	
Concert Conditions Double Incompany	4.00/		0.070.450	00.50		4 504 000	04.00		0 007 700	
General Conditions, Bond & Insurance	12%	¢	2,076,452	28.59		1,531,338	21.09	¢	3,607,790	
Subtotal		Ф	19,380,216	200.88		\$ 14,292,486	196.82	Ф	33,672,702	
Concret Contractoria OLUS D	1 5 9/		2 007 022	40.02		0 4 4 2 9 7 2	20 52			
General Contractor's OH&P	15%	¢	2,907,032	40.03		2,143,873	29.52	¢	5,050,905	
Subiolal		Φ	22,207,240	300.92		φ 10,430,359	220.34	φ	30,723,000	
Equalation to midmaint of constr. 26 mon to										
escalation to midpoint of constr., so monito	16 229/		2 615 902	40.70		20			2 615 902	
Subtotal	10.2276	¢	25 003 051	356 71		16 /36 350	226.34	¢	42 330 410	
Subiola		φ	25,903,051	330.71		φ 10,430,339	220.34	Φ	42,339,410	
Escalation to midpoint of constr. 54 mon to										
constr. start 15 mon duration at 4% per vr	23 07%	na		-		3 791 055	52 21		3 791 055	
Subtotal		\$	25,903,051	356.71		\$ 20.227.415	278.55	\$	46,130,466	
		Ŧ	,,			• , ,		Ŧ	,,	
Bid Contingency	5%		1,295,153	17.84		1,011,371	13.93		2,306,523	
Subtotal		\$	27.198.204	374.54		\$ 21.238.785	292.48	\$	48,436,989	
			,,			. , ,		Ţ	-,,	
Construction Contingency	10%		2,719,820	37.45		2,123,879	29.25		4,843,699	
Subtotal		\$	29,918,024	412.00		\$ 23,362,664	321.72	\$	53,280,688	
			, -,- ·					ţ	, -,	
Construction Manager's Fee	Excluded		-	-		-	-		-	
Subtotal		\$	29,918,024	412.00		\$ 23,362,664	321.72	\$	53,280,688	
		-	· ·			. ,				
TOTAL CONSTRUCTION COST		\$	29,918,024	412.00		\$ 23,362,664	321.72	\$	53,280,688	

![](_page_65_Picture_0.jpeg)

October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit		Total \$	Subtotal Trades	Notes
1	GENERAL REQUIREMENTS							
2								
3	Mobilization, 3%	1	ls	725,200.00	\$	725,200		
4								
5	***Subtotal GENERAL REQUIREMENTS						\$ 725,200	Subtotal Trade
6								
7								
8	DEMOLITION AND SITEWORK							
9								
10	Demolition of interior spaces				<u> </u>			
11	Cellar floor	28,962	sf	8.00	\$	231,696		
12	Floor finish	28,962	sf	info	\$	-		
13	Ceilings	23,727	sf	info	\$	-		
14	MEP's	28,962	sf	info	\$	-		
15	Furniture	28,962	sf	info	\$	-		
16	Remove load bearing walls, 2' th.	2,941	sf	20.00	\$	58,816		
17	Remove elevator and equipment, assume 2 stop	1	ea	10,000.00	\$	10,000		Along col.9x
18	Remove hung elevator pit	1	ea	3.000.00	\$	3.000		Along col.9x
19	Remove column covers	3.455	sf	3.00	\$	10.366		
					-	-,		Assume perimeter walls
20	Partitions	24,703	sf	2.50	\$	61,757		remain
21	Remove stairs - complete	3	flts	5,000.00	\$	15,000		
22	Removal of library books from book shelves	By Owner			<u> </u>	,		
23					<u> </u>			
24	Entry floor	43,655	sf	8.00	\$	349,240		
25	Floor finish	43,655	sf	info	\$	-		
26	Ceilings	38,420	sf	info	\$	-		
27	MEP's	43,655	sf	info	\$	-		
28	Furniture	43,655	sf	info	\$	-		
29	Remove load bearing walls, 2' th.	2,499	sf	20.00	\$	49,984		
30	Remove elevator and equipment, assume 2 stop	w/cellar	ea	10,000.00	\$	-		Along col.9x
31	Remove hung elevator pit	w/cellar	ea	3,000.00	\$	-		Along col.9x
32	Remove column covers	4.655	sf	3.00	\$	13.964		
		,	-		, ·	-,		Assume perimeter walls
33	Partitions	29.553	sf	2.50	\$	73.883		remain
34	Remove stairs - complete	w/cellar	flts	5.000.00	\$	-		
35	Removal of library books from book shelves	By Owner			<u> </u>			
36	,							
				1				

0	ELLANA
	Construction Cost Consultants

October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit		Total \$	Subtotal Trades	Notes
37	Allow for miscellaneous demolition and removals (cellar)	1	ls	20,000.00	\$	20,000		
38	Allow for miscellaneous demolition and removals (entry)	1	ls	25,000.00	\$	25,000		
39	Asbestos abatement excluded							
40								
41	***Subtotal DEMOLITION AND SITEWORK						\$ 922,706	Subtotal Trade
42								
43								
44	FOUNDATIONS AND SUBSTRUCTURE							
45								
	Structural work at removed masonry core at cellar level							
46	and entry level							
47	Temporary footings for temporary shoring columns							
48	Chop existing slab (sawcut and remove)	8	loc	1,500.00	\$	12,000		
49	New concrete footings, 8' x 8'	8	ea	6,500.00	\$	52,000		
50	Excavation, backfill and dispose	85	су	200.00	\$	17,067		
51	Patch/replace slab on grade	563	sf	15.00	\$	8,448		
	Protect existing equipment at subcellar room where							
52	temporary footing are to be installed	1	loc	1,500.00	\$	1,500		
53	Temporay shoring (includes the following)	456	lf	655.00	\$	298,680		
54	Temporary shoring columns			incl.above				
55	Needling beams			incl.above				
56	Shoring beams			incl.above				
57	New steel columns, assume 90#/LF	800	lf	450.00	\$	360,000		
	New steel lintel beams and drypacking, assume							
58	175#/LF	456	lf	925.00	\$	421,800		
59								
	Fill-in floor opening at removed elevator, 7' x 8' slab on							
60	grade, including filling in of existing pit with sand	1	loc	2,600.00	\$	2,600		Along col.9x
61								
62	New concrete elevator pit for custom glass elevator							Assume 5' deep
63	Chop existing slab (sawcut and remove)	1	loc	2,100.00	\$	2,100		
64	New concrete elevator pit slab, 10' x 10'	1	ea	3,600.00	\$	3,600		
65	New concrete elevator pit walls, 5'h.	1	ea	13,600.00	\$	13,600		
66	Excavation, backfill and dispose	28	су	375.00	\$	10,417		Assume 5' deep
67	Patch/replace slab on grade including dowels	80	sf	27.50	\$	2,200		
68								
69	New hung elevator pit for holeless elevator				-			Assume 2' deep
70	Chop existing slab (sawcut and remove)	1	loc	1,775.00	\$	1,775		1

![](_page_67_Picture_0.jpeg)

	Description	Quantity	Unit	\$/Unit	Total \$	Subtotal Trades	Notes
71	New concrete elevator pit slab, 10' x 8'	1	ea	2,950.00	\$ 2,950		
72	New concrete elevator pit walls, 2'h.	1	ea	3,850.00	\$ 3,850		
73	Excavation, backfill and dispose	11	су	375.00	\$ 4,167		Assume 2' deep
74	Patch/replace slab on grade including dowels	80	sf	27.50	\$ 2,200		
75							
76	Assume no water present under existing slabs on grade						
77							
78	***Subtotal FOUNDATIONS AND SUBSTRUCTURE					\$ 1,220,953	Subtotal Trade
79							
80							
81	SUPERSTRUCTURE						
82							
	Fill-in floor opening at removed elevator, assume no new						
83	framing required, 7' x 8'	1	loc	4,240.00	\$ 4,240		Along col.9x
	Allow for protection and clean-up of equipment at sub-						
84	cellar below hung elevator pit when removed	1	ls	1,500.00	\$ 1,500		
85	Close-up existing openings at removed stairs	3	loc	25,000.00	\$ 75,000		
86							
	New infill slab including steel framing, decking and						
87	concrete fill	1,650	sf	62.00	\$ 102,300		
88							
89	Spray-on fireproofing to new steel and existing steel	1	ls	48,500.00	\$ 48,500		
90							
	Allow for structural reinforcement of existing framing at						Partial areas, remainder at
91	compact mobile storage systems Ph1	1,483	sf	50.00	\$ 74,160		SOG
92							
	Intumescent paint at exposed columnss - includes						
93	scraping, prep and grinding	35	cols	5,775.00	\$ 202,125		
94							
95	OSHA protection	1	ls	11,900.00	\$ 11,900		
96							
97	***Subtotal SUPERSTRUCTURE					\$ 519,725	Subtotal Trade
98							
99							

![](_page_68_Picture_0.jpeg)

October 11, 2017 rev. Nov.9, 2017

				** = ****		eastetal madee	10105
100 <b>EX</b>							
101							
Re	emove and replace existing windows with new non-						16 arched windows at entry
102 opr	perable insulated glass and aluminum windows	2,880	sf	300.00	\$ 864,000		level
103							
Re	emove and replace existing windows with new non-						22 retangular windows at
104 opr	perable insulated glass and aluminum windows	1,320	sf	250.00	\$ 330,000		cellar level
Re	emove and reinstall existing grilles at cellar level						
105 wir	ndows that are replaced	1,320	st	30.00	\$ 39,600		
106							
107 Ex	kterior caulking and sealing to windows Ph1	2,880	st	2.00	\$ 5,760		
108 Ex	kterior caulking and sealing to windows Ph2	1,320	st	2.00	\$ 2,640		
109							
110 ***;	*Subtotal EXTERIOR WALL					\$ 1,242,000	Subtotal Trade
111							
112							
113 <b>RC</b>	OOFING AND WATERPROOFING						
114							
115							
116 ***	*Subtotal ROOFING AND WATERPROOFING					\$-	Subtotal Trade
117							
118							
119 <b>IN</b>	ITERIORS CONSTRUCTION						
120							
121 Pa	atch and repair existing walls to remain						
122 C	Cellar floor						
123	Perimeter walls	10,421	sf	3.50	\$ 36,475		
124	Interior walls	13,583	sf	3.00	\$ 40,748		
125 E	Entry floor						
126	Perimeter walls	11,012	sf	3.50	\$ 38,542		
127	Interior walls	14,605	sf	3.00	\$ 43,814		
128							
129 Pa	artitions						
130 C	Cellar floor						
131	Aluminum and glass wall, 10'h.	1,930	sf	85.00	\$ 164,050		Item note #4
132	Partition above glass walls	1,617	sf	11.35	\$ 18,357		
133	Interior glazed curtain wall	3,327	sf	110.00	\$ 365,946		Item note #7
134	2 hr rated gwb wall	680	sf	14.90	\$ 10,133		

![](_page_69_Picture_0.jpeg)

	Description	Quantity	Unit	\$/Unit	Total \$	Subtotal Trades	Notes
135	Shaft walls, gwb	625	sf	16.10	\$ 10,061		
136	Non-rated full height gwb partition	4,264	sf	11.35	\$ 48,398		
137	Non-rated full height one-sided gwb partition	6,415	sf	6.65	\$ 42,657		
138	Column covers, awb	5,293	sf	7.50	\$ 39,701		
139	, <b>_</b>						
140	Entry floor						
141	Aluminum and glass wall, 10'h.	5,260	sf	85.00	\$ 447,100		Item note #4
142	Partition above glass walls	2,956	sf	11.35	\$ 33,552		
143	Interior glazed curtain wall	2,827	sf	110.00	\$ 310,994		Item note #7
144	2 hr rated gwb wall	968	sf	14.90	\$ 14,430		
145	Shaft walls, gwb	531	sf	16.10	\$ 8,550		
146	Non-rated full height gwb partition	12,715	sf	11.35	\$ 144,312		
147	Non-rated full height one-sided gwb partition	625	sf	6.65	\$ 4,155		
148	Column covers, awb	7,872	sf	7.50	\$ 59,044		
149							
150	Floor finishes						
151	Carpet tile	34,387	sf	6.00	\$ 206,319		
152	Cork tile	34,387	sf	9.00	\$ 309,479		
153	VCT	1,652	sf	5.50	\$ 9,086		
154	VCT at mechanical, electrical and equipment rooms	1,278	sf	5.50	\$ 7,029		
155	Ceramic floor tile including waterproof membrane	914	sf	28.00	\$ 25,592		
	Allow for trenching and patching of floors for new floor						
156	boxes	290	lf	90.00	\$ 26,100		Cellar level sog only
157							
158	Base finish						
159	Vinyl base	7,955	lf	4.50	\$ 35,798		
160	Ceramic tile base	300	lf	20.00	\$ 6,000		
161							
162	Wall finishes						
163	Paint walls	77,150	sf	1.75	\$ 135,013		
164	Ceramic tiled wall	2,400	sf	18.00	\$ 43,200		
165							
166	Ceilings finishes						
167	Acoustical plaster ceiling including suspension system	34,117	sf	40.00	\$ 1,364,660		
	Acoustical celling panels, 4' x 4', including suspension						
168	system	36,309	sf	18.00	\$ 653,553		
169	Drywall ceilings at bathrooms	914	sf	20.00	\$ 18,280		

![](_page_70_Picture_0.jpeg)

October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit		Total \$	Subtotal Trades	Notes
	Exposed ceilings at mechanical, electrical and							
170	equipment rooms, paint	1,278	sf	2.50	\$	3,195		
171	Allow for drywall facias at ceilings	10,564	sf	20.00	\$	211,275		
172	Smoke baffle at floor opening	96	lf	175.00	\$	16,800		
173								
174	Doors and Frames							
	New roll down fire shutter at Entry Level along col.line							
175	A1	210	sf	125.00	\$	26,250		Assume 10'h.
	New coiling security grille at Entry Level feature stair							
176	along col.line Kx	210	sf	150.00	\$	31,500		Assume 10'h.
	New coiling security grille at Entry Level Access							
177	Services area along col.line 5x and B	800	sf	150.00	\$	120,000		Assume 10'h.
	Work at existing 10th Ave. entrance - storfront, doors							
178	and revolving door	NA						
179	Cellar floor							
180	Wood door and metal frame at gwb walls - complete	-	ea	1,625.00	\$	-		
181	Wood doors and metal frame at gwb walls - complete	2	pr	3,100.00	\$	6,200		
182	Glass door, single	5	ea	6,000.00	\$	30,000		
183	Glass door, double	5	pr	12.000.00	\$	60.000		
184	Existing door and frame - refurbish (allow)	27	leaf	500.00	\$	13,500		
185	Entry floor				Ŧ	,		
186	Wood door and metal frame at gwb walls - complete	5	ea	1,625,00	\$	8,125		
				.,0_0100		0,120		
107	Wood doors and metal frame at gwb walls complete		pr	2 100 00	¢			
107	Close door single	-	pi aa	5,100.00	Ψ Φ	-		
100		30	ea	6,000.00	ф Ф	228,000		
189	Glass door, double	1	pr	12,000.00	\$	12,000		
190	Existing door and frame - returbish (allow)	19	lear	500.00	\$	9,500		
191	Allow for interior work at now passage to 11 Common							
400	Allow for interior work at new passage to JJ Common	0.40	- 6	050.00	<b>~</b>	400.000		
192	area	640	SI	250.00	\$	160,000		
193	Millouwele							
194								
105		2 670	١£	560.00	¢	2 050 600		Plan noto #1
195		3,678	II If	500.00	\$	2,059,080		Plan note #2
196	Fixed collection stack - / tiers at cellar	924	IT If	525.00	\$	485,100		Plan note #2
197	Fixed collection stack - 3 tiers at entry	1,269	IT	225.00	\$	285,525		Plan note #2
198								

![](_page_71_Picture_0.jpeg)

October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit	Total \$	Subtotal Trades	Notes
199	Loose tables and chairs			By Owner			
200	Computer workstations			By Owner			
201	Collaborative workstations			By Owner			
202	Microfilm readers			By Owner			
203	Office and conference room furniture			By Owner			
204							
205	Kitchen cabinets	16	lf	750.00	\$ 12,000		
206	Built-in millwork tech help Desk	27	lf	1,200.00	\$ 32,400		Plan note #13, Entry level
207	Built-in millwork reference desk	27	lf	1,200.00	\$ 32,400		Plan note #13, Entry level
208	Built-in millwork circulation/reference desk	49	lf	1,000.00	\$ 49,000		Plan note #13, Entry level
209	Bathroom vanity top	46	lf	300.00	\$ 13,800		
210	Millwork security station	28	lf	1,200.00	\$ 33,600		Entry level
211	Rebuild raised platform floor	1,120	sf	35.00	\$ 39,200		Entry level, plan note #15
212	Allow for millwork not shown	1	ls	50,000.00	\$ 50,000		
213							
214	Decorative metal work						
215	New custom guard rail at rebuilt raised platform	115	lf	1,200.00	\$ 138,000		
216	New glass guardrail at opening to cellar level	92	lf	1,500.00	\$ 138,000		
	New custom ornamental metal and grand stair and						
217	railing with stone treads	1	flt	171,000.00	\$ 171,000		
218	Allow for wall mounted rails at ramps	138	lf	85.00	\$ 11,730		Cellar floor
219							
	General protection for spaces in the sub-cellar affected by						
220	new work	11,530	sf	2.00	\$ 23,060		
	General protection for existing stairs and escalators to						
221	remain	1	ls	10,000.00	\$ 10,000		
222							
223	Interior caulking and sealing	72,617	sf	0.75	\$ 54,463		
224							
225	General miscellaneous wood blocking, nailers etc.	72,617	sf	3.00	\$ 217,851		
226							
227	General miscellaneous iron, supports and sundries	72,617	sf	2.50	\$ 181,543		
228							
229	***Subtotal INTERIORS CONSTRUCTION					\$ 9,695,823	Subtotal Trade
230							
231							


	Description	Quantity	Unit	\$/Unit	Total \$	Subtotal Trades	Notes
232	SPECIALTIES						
233							
234	Bathroom accessories						
235	Mirrors	184	sf	35.00	\$ 6,440		
236	Toilet paper holder	15	ea	75.00	\$ 1,125		
237	Seat cover dispenser	15	ea	75.00	\$ 1,125		
238	Soap dispensers	9	ea	75.00	\$ 675		
239	Paper towel dispenser and disposal unit	6	ea	400.00	\$ 2,400		
240	Grab bars	8	ea	150.00	\$ 1,200		
241							
242	Toilet partitions						
243	Regular stall	11	ea	1,200.00	\$ 13,200		
244	Handicap stall	4	ea	900.00	\$ 3,600		
245	Urinal screens	2	ea	500.00	\$ 1,000		
246							
247	Building signage (C of O only)	1	ls	5,500.00	\$ 5,500		
248	Way finding signage	By Owner					
249	Exterior building signage	By Owner					
250							
251	Lockers at Entry Level	10	ea	450.00	\$ 4,500		
252							
253	Window treatment	NA					
254							
255	***Subtotal SPECIALTIES					\$ 40,765	Subtotal Trade
256							
257							
258	EQUIPMENT						
259							
260	Bookcheck 942 model (for 3M Tattle Tape)	2	ea	5,250.00	\$ 10,500		
261	Book security turnstile at entry Level along col.line B	3	lanes	15,000.00	\$ 45,000		Allow
262	Security turnstile at entry Level along colline Ax	7	lanes	15,000.00	\$ 105,000		Allow
263	Kitchen appliances - refrigerator and microwave	2	loc	1,600.00	\$ 3,200		Allow
264							
265	Loading dock equipment and accessories	NA					
266	AV equipment	By Owner					
267	Vending machines at entry level café	NA					
268							
269	***Subtotal EQUIPMENT					\$ 163.700	Subtotal Trade
270						,	



October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit	Total \$	Subtotal Trades	Notes
271							
272	CONVEYING SYSTEMS						
273							
274	Custom glass enclosed elevator, 2 stops	1	ea	320,000.00	\$ 320,000		Including cab allowance
275	Custom glass enclosure at above elevator (allow)	1,728	sf	125.00	\$ 216,000		
276							
277	New holeless elevator, 2 stops	1	ea	305,000.00	\$ 305,000		Including cab allowance
278							
279	***Subtotal CONVEYING SYSTEMS					\$ 841,000	Subtotal Trade
280							
281							
282	PLUMBING						
283							
284	Based on drawings dated August 9, 2017						
285	Architectural - existing and new architectural feasibility						
286	study dated September 18, 2017.						
287	Engineering A & J Consulting Engineering Services.						
288							
289	Existing services C. W. Service, booster pumps,						
290	domestic water heaters - sanitary and vent network						
291	all to remain						
292							
293	Demolition / Remedial Work						
294	Removal - Disposal of existing plumbing fixtures						
295	Water closet	18	ea	400.00	\$ 7,200		
296	Urinal	4	ea	400.00	\$ 1,600		
297	Lavatory	24	ea	320.00	\$ 7,680		
298	Electric water cooler	1	ea	400.00	\$ 400		
299	Kitchen sink	1	ea	350.00	\$ 350		
300	Janitor sink	2	ea	400.00	\$ 800		
301	Remove Domestic Water Piping 'L' Copper (?)						
302	Insulation	750	lf	8.00	\$ 6,000		
303	Remove Sanitary and Vent Cast Iron						
304	Piping	800	lf	8.00	\$ 6,400		
305	Remove / disposal roughing	50	fix	120.00	\$ 6,000		
306							
307	New Work						
308	Fixtures Including Water and Drainage						
309	Water closet	19	ea	1,650.00	\$ 31,350		



	Description	Quantity	Unit	\$/Unit		Total \$	Subtotal Trades	Notes
310	Urinal	5	ea	1,750.00	\$	8,750		
311	Lavatory	26	ea	1,520.00	\$	39,520		
312	Electric water cooler	2	ea	2,675.00	\$	5,350		
313	Janitor sink	2	ea	1,700.00	\$	3,400		
314	Roughing of above fixtures	52	ea	475.00	\$	24,700		
315	Add for electronic faucets	1	ls	17,500.00	\$	17,500		
316	Domestic Water 'L' Copper - Soldered							
317	2 1/2" - 2" Pipe size	250	lf	65.50	\$	16,375		
318	1 1/2" - 1 1/4" Pipe size	300	lf	50.20	\$	15,060		
319	1" - 3/4" & 1/2" Pipe size	250	lf	45.50	\$	11,375		
320	Valving and specialties	1	ls	5,250.00	\$	5,250		
321								
322	Pipe Insulation:							
323	2 1/2" - 1 1/4"	550	lf	17.50	\$	9,625		
324	1" - Less	250	lf	15.20	\$	3,800		
325								
326	Sanitary Waste and Vent - Cast Iron - Hubless:							
327	4" - 3" Pipe size	550	lf	60.00	\$	33,000		
328	2" - 1 1/2" Pipe size	300	lf	41.00	\$	12,300		
329	Tie into cast iron network	1	ls	3.500.00	\$	3,500		
330	Elevator Sump:				<u> </u>	,		
331	Remote controller - alarm							
332	50 GPM, 0.5 hp	1	set	5,500,00	\$	5.500		
333	1 1/2" Pump discharge	80	lf	75.00	\$	6.000		
334	Gas - Natural - Re: Generator				· ·	,		
335	See HVAC for diesel fuel allowance							
336	150 KW - diesel - allowance	1	allow		\$	-		see HVAC
337					<u> </u>			
338	Testing of all systems (new)	1	ls	3,000.00	\$	3,000		
339	<b>0 ) ( )</b>				<u> </u>	,		
340	Choppng - patching - fire stopping	1	iob	1.550.00	\$	1.550		
341	Painting - valve tags - charts - identification	1	ls	2,100.00	\$	2.100		
342	Handling - distribution - storage	1	job	1,250.00	\$	1,250		
343			,	,		,		
344	Coordination, as build drawings, trucking, rentals,							
345	small tools, site specific requirements, bond and							
346	insurance - supervision	1	job	17.525.00	\$	17.525		
347	er erhe er		<b>,</b>	,===:	ŕ	.,-=•		
348	***Subtotal PLUMBING						\$ 314,210	Subtotal Trade



	Description	Quantity	Unit	\$/Unit	٦	Total \$	Subtotal Trades	Notes
349								
350								
351	HVAC							
352								
	Estimate based on feasibility report dated September 18,							
353	2017 - Haaren Hall - Lloyd Sealy Library							
354	Architectural drawing with existing and proposed							
355	architectural upgrades. Sub cellar 11,530 S.F							
356	limited work.							
357	Cellar floor 28,962 S.F total renovation							
358	First floor 43,665 S.F total renovation							
359	Existing systems: (Partial Listing)							
360	3,600 Ton refrigeation plant							
361	Con Edison steam - heat exchangers							
362	Perimeter radiation - to be replaced							
363	Air handlers with outside air supply - various							
364	systems							
365	Variable air volume boxes - non fan							
366	Smoke purge fans - 5 each + / -							
367	Outside air make-up systems							
368	Various local electric cabinet heaters							
369	Toilet exhaust fans - 4 each							
370	Server rooms - 2 each							
371	Special collection system - N.I.C.							
372	ATC - BMS - DDC control systems							
373	Radiation pneumatic controls to be revised							
374								
375	Demolition of all ducted air distribution, air devices,							
376	V.A.V. units, insulation, radiation, related controls,							
377	noted fans electric cabinet heaters, related fin tube							
378	piping, noted air handlers etc. as follows:							
379	Demolition - cellar floor	28,962	sf	1.50	\$	43,443		
380	Demolition - first floor	43,655	sf	1.50	\$	65,483		
381	Demolition of equipment as follows:							
382	Fans SE - 1, SE - 2, SE - 3, SE - 4	4	fans	3,750.00	\$	15,000		
383	Air handling unit AHU - L - 5	1	ahu	8,600.00	\$	8,600		
384	Roof top louvered penthouse	3	ea	2,500.00	\$	7,500		
385								
386								

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October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit	Tot	al \$	Subtotal Trades	Notes
387	New Work							
388	Provide fit-up of cellar floor and first floor							
389	air distribution including ductwork, insulation, grilles,							
390	registers, diffusers all associated specialties, runtal							
391	radiation, ATC-BMS-DDC controls, site specific							
392	requirements, etc. as follows:							
393	Cellar floor	28,962	sf	42.50	\$ 1,2	230,885		
394	First floor	43,655	sf	42.50	\$ 1,8	355,338		
395	Smoke exhaust fan - 1 16,00 CFM - cabinet	1	ea	20,000.00	\$	20,000		
396	Smoke exhaust fan - 2 12,000 CFM - cabinet	1	ea	15,000.00	\$	15,000		
397	Smoke exhaust fan - 3 9,000 CFM - roof top	1	ea	12,500.00	\$	12,500		
398	Smoke exhaust fan - 4 5,000 CFM - roof top	1	ea	8,200.00	\$	8,200		
399	General exhaust fan 16,000 CFM - inline	1	ea	20,000.00	\$	20,000		
400	Fresh air fan - AC - L5 16,000 CFM - inline	1	ea	20,000.00	\$	20,000		
401								
402	Roof top louvered penthouse	2	ea	7,150.00	\$	14,300		
403								
404	Special collection area - cellar							
405	Dedicated 5.0 ton refrig chilled water, FCU							
406	humidifier - related piping, ATC, etc.	1	rm	25,000.00	\$	25,000		
407								
408	Library server room - entry level							
	Provide a 2.0 T.R. split - air cooled AC unit including							
409	roof ton condenser, refrigerant nining ATC etc.	1	rm	25 000 00	¢	25 000		
410	Tool top condensel, reingerant piping, ATO, etc.	1		23,000.00	Ψ	23,000		
410	New air handling unit - AC - L - 5 - chhilled water							
	coils steam coils air side economizer related nining							
111	- valving-							
412	16 000 CEM	1	ahu		helow			below
413	Return spill air fan - spill penthouse	1	set		below			below
410	Local M F R, ductwork and specialties	1	mor		below			below
/15	Variable fequency drives - ATC	2	62		below			below
416	All of the above	1		151 000 00	¢ ,	151 000		below
<u>410</u>		1	15	131,000.00	Ψ	131,000		
/18	Electric cabinet unit beaters	10	63	2 400 00	\$	24 000		
/10		10	ea	∠,400.00	Ψ	27,000		
420	Motor starters HOA and disconnects	1	le	21 000 00	\$	21 000		
420		I	15	∠1,000.00	ψ	21,000		
421								



	Description	Quantity	Unit	\$/Unit		Total \$	Subtotal Trades	Notes
422	Air and water balance, adjustments, reports	1	job	21,000.00	\$	21,000		
423								
424	Chopping, patching, fire sealing	1	job	6,500.00	\$	6,500		
425	Painting - identification - valve taggging / charts	1	ls	3,500.00	\$	3,500		
426								
	Coordination, as built drawings, trucking, rentals, small							
	tools, site specific requirements, bond / insurance -							
427	supervision	1	job	127,750.00	\$	127,750		
428								
429	***Subtotal HVAC						\$ 3,740,998	Subtotal Trade
430								
431								
432	FIRE PROTECTION							
433								
	Provide a totally sprinklered area in the Cellar and Entry							
	levels, and chemical fire suppression system in the							
	event and chemical file suppression system in the							
	expanded special collection area and the building server							
	room emarged under this project. Existing branch							
	sprinkiers to be removed and replaced with new sprinkier							
	network based on proposed architectural plans. Standpipe							
	and sprinkler mains - sprinkler service will remain - floor							
	control stations all to remain. Provide design calculation,							
	shop drawings, acceptance of installation by New York							
434	City Building Department, etc.:							
435								
436	Sub cellar 11,530 S.F.	115	hds		exis	sting		existing
437	Cellar floor 28,962 S.F.	270	hds	420.00	\$	113,400		
438	First floor - entry level - 43,655 S.F.	400	hds	420.00	\$	168,000		
439	Expansion of Clean Agent System:							
440	Similar to FM - 200							
441	Special collection	1	rm	25,000.00	\$	25,000		
442	Building server room	1	rm	25,000.00	\$	25,000		
443								
444	Piping Sch. 40 CS Blk.:							
445	4" - 3" Piping - 'Loop'	3,100	lf	80.00	\$	248,000		
446								
447	Demolition of Existing Branch sprinkler heads and							
448	related piping existing mains to remain:						Note Only	



October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit	Total \$	Subtotal Trades	Notes
449	Cellar floor	300	hds	125.00	\$ 37,500		
450	First floor - entry floor	420	hds	125.00	\$ 52,500		
451							
452	Pressure testing	2	zones	1,500.00	\$ 3,000		
453	Painting of pipe (7700 LF. + / -)	1	ls	32,500.00	\$ 32,500		
454							
455	Verification of flow station, fire pump and entire						
456	general fire network	1	bldg	22,000.00	\$ 22,000		
457			Ū	· · · ·	· · ·		
458	Coordination, as built drawings, trucking, rentals, small						
459	tools, site specific requirements bond / insurance -						
460	supervision	1	job	27,500.00	\$ 27,500		
461				· · · ·	· · ·		
462	***Subtotal FIRE PROTECTION					\$ 754,400	Subtotal Trade
463							
464							
465	ELECTRICAL						
466							
467	Selective demolition (disconnect and make safe)	1	ls	10,000.00	\$ 10,000		
468				·			
469	Power Distribution						
470	225 Amp panel	7	ea	5,907.00	\$ 41,349		
471	100 Amp panel	3	ea	3,420.00	\$ 10,260		
472	Panel mounting assembly	10	ea	175.00	\$ 1,750		
473	Tap to existing service	3	loc	750.00	\$ 2,250		
474							
475	2" conduit	1,280	lf	30.88	\$ 39,526		
476	1 1/2" conduit	400	lf	25.56	\$ 10,224		
477	# 3/0 wire	3,840	lf	10.05	\$ 38,592		
478	# 3 wire	1,200	lf	4.74	\$ 5,688		
479	# 4 wire	1,280	lf	4.29	\$ 5,491		
480	# 8 wire	400	lf	2.96	\$ 1,184		
481							
482	Lighting	72,617	sf	20.00	\$ 1,452,340		
483							
484	Lighting Control	72,617	sf	5.00	\$ 363,085		
485							
486	Branch Circuitry	72,617	sf	7.50	\$ 544,628		



October 11, 2017 rev. Nov.9, 2017

	Description	Quantity	Unit	\$/Unit	Total \$	Subtotal Trades	Notes
487	Elevator pit assembly (switch, light, GFI receptacle)				included		
488	Power to electronic plumbing faucets and valves (F&I B.O.)				included		
489	Power to library gate (anti-theft protection) - F&I B.O.				included		
490	Power to LV equipment and devices (security, PA and A/V)				included		
491							
492	Mechanical Requirements						
493	VFD (F.B.O.)	2	ea	1,255.00	\$ 2,510		
494	Electric water cooler	2	ea	165.00	\$ 330		
495	Electric cabinet unit heater	10	ea	165.00	\$ 1,650		
496	Elevator sump pump	1	ea	382.85	\$ 383		
497	Exhaust fan	7	ea	382.85	\$ 2,680		
498	Fuel oil pump	1	ea	382.85	\$ 383		
499	Split system	1	ea	765.00	\$ 765		
500	Air handling unit	1	ea	382.85	\$ 383		
501	Roof top unit	2	ea	382.85	\$ 766		
502	Conduit and wire	1	ls	50,000.00	\$ 50,000		
503							
504	Fire Alarm System	72,617	sf	5.50	\$ 399,394		
505	Fire alarm control panel				included		
506	Fire alarm devices				included		
507	Conduit and wire				included		
508	Testing/programming/engineering fees				included		
509							
510	Tel/Data System	72,617	sf	6.50	\$ 472,011		Full turnkey system
511	Equipment racks				included		
512	Vertical and horizontal wire manager				included		
513	Patch panels, power plug strip, etc.				included		
514	Communication outlet (wall, floor, ceiling mounted)				included		
515	1" conduit				included		
516	Cable cat.6				included		
517	Terminations				included		
518	Testing and labeling				included		
519							
520	Security System	72.617	sf	6.50	\$ 472.011		Full turnkey system
521	Public Address System	72.617	sf	2.50	\$ 181,543		Full turnkey system
522	Audio/Visual System	72,617	sf	0.85	\$ 61,724		Empty conduit only



	Description	Quantity	Unit	\$/Unit	Тс	otal \$	Subtotal Trades	Notes
523	-		-					
524	Temporary power and Light	72,617	sf	1.50	\$	108,926		
525	Vibration isolation/seismic restraint	1	ls	15,000.00	\$	15,000		
526	Sleeves firestopping	1	ls	15,000.00	\$	15,000		
527	Cutting/patching	1	ls	20,000.00	\$	20,000		
528								
529	***Subtotal ELECTRICAL						\$ 4,331,823	Subtotal Trade
530								
531								
532	NEW GENERATOR AT ROOF							
533								
534	New generator on 2nd floor roof							
535	150kw outdoor generator with enclosure and belly tank	1	ea	165,000.00	\$	165,000		
536	Factory testing					included		
537	Fuel for test and final fill					included		
520	Unload/unpack, setting in place generator and					included		
550	accessories					Included		
539	100 ATS	1	ea	5,500.00	\$	5,500		
540	ATS mounting assembly	1	ea	175.00	\$	175		
541	Testing/commissioning	1	ea	30,000.00	\$	30,000		
542	Generator Diesel Oil System							
543	Fuel oil storage double wall		ls		below			
544	Fuel oil pumping - local piping		ls		below			
545	Fills / venting - alarms - auditable - visual - signage		ls		below			
546	Piping - double wall allowances		ls		below			
547	Connections to tanks - generators		ls		below			
548	All of the above	1	ls	77,500.00	\$	77,500		
549	New fuel riser enclosure	200	lf	360.00	\$	72,000		
550	Allow for roof dunnage steel	1	allow	30,000.00	\$	30,000		
551	Allow for roof protection and repair as necessary	1	allow	5,000.00	\$	5,000		
552								
553	***Subtotal NEW GENERATOR AT ROOF						\$ 385,175	Subtotal Trade

### 8 APPENDIX

8.1 STRUCTURAL REPORT

#### 8.2 MEP/FP REPORT

8.3 DETAILED EXISTING COLLECTION ANALYSIS

### 8.4

PROPOSED LIBRARY ENTRY SEQUENCE

### 8.5

ARCHITECTURAL COST ESTIMATE DRAWINGS

APPENDIX 8.1

STRUCTURAL REPORT

### A Feasibility Study for the Renovation of the Lloyd Sealy Library John Jay College of Criminal Justice Haaren Hall, 899 10th Avenue, New York, NY

#### INTRODUCTION

The Dormitory Authority of the State of New York (DASNY) has commissioned Ikon.5 Architects to accomplish a feasibility study for renovations to the Lloyd Sealy Library of John Jay College of Criminal Justice, located in Haaren Hall, at 899 10th Avenue in New York, NY. Ikon.5 has retained Leslie E. Robertson Associates (LERA), to provide structural engineering services related to the feasibility of the renovations.

#### The Existing Building

The original building was constructed in the early 1900's as the DeWitt Clinton High School and includes five floors (plus an attic) above grade, a full basement, and a partial sub-basement. The structure includes masonry bearing walls, interior cast-iron and steel columns, steel floor framing, and arched concrete floor construction. Foundations are shallow spread footings on rock.

In the late 1980's, John Jay College constructed a Vinoly-designed addition, located to the West of the original 1900's building. Extensive structural modifications to the Basement Level and Entry Level (Floor 1) of the original building were performed to accommodate the addition of a new library space. The combined buildings became Haaren Hall. The structural modifications included the addition of floor space supported by structural steel framing and concrete slab on steel deck. In many locations, the existing floors were reinforced by adding beams beneath the existing slab, or by replacing areas of the original arched concrete floor construction with concrete slab on steel deck.

In 2007, John Jay College constructed an SOM-designed addition to the West of Haaren Hall. LERA was the structural engineer for this 2007 addition.

#### Proposed Renovation of the Existing Library

Drawings for the proposed renovation of the library, produced by Ikon.5 Architects, identify alterations that will require structural modifications to the building. Proposed alterations include the following:

- 1. Remove walls for two existing masonry cores at the Basement Level and Entry Level (Floor 1), see Figure 1 and Figure 2;
- Fill-in an approximate 20 foot by 80 foot portion of the Entry Level atrium opening to provide additional floor space, see Figure 2, and;
- 3. Provide an Entry Level wall opening at the West wall of Haaren Hall to provide access between Haaren Hall and the SOM addition. Add stairs and ramps to transition between the different floor elevations, see Figure 3.



Figure 1 - Basement Level - Remove Masonry Walls



Figure 2 - Entry Level - Remove Masonry Walls, Add Floor Space



Figure 3 - Entry Level Connection at West Wall of Haaren Hall

September 11, 2017 Page 4 of 17

#### BUILDING UPGRADES TO COMPLY WITH CURRENT BUILDING CODE

We have reviewed the available certificates of occupancy on file with the New York City DOB, and have determined that the renovations will not change the occupancy categories of the floors. Per Building Code Section 1601.2.2 for Live Loads, loads indicated in the applicable prior Code shall be permitted for structural calculations using engineering formulas from this Code (2014) provided that the structural safety of the prior Code building is not reduced.

In review of the live load requirements per the 1968 and 2014 Building Code, we determined that the required design live loads for the applicable floor occupancies have not increased since the structural design of the building modifications that were required to accommodate the new library. We spot checked individual structural members, which are representative of the typical floor construction, and determined that the existing floor construction, meets the requirements of the 1968 Building Code, and is therefore capable of resisting the design live loads that would result from the proposed renovations.

The 2014 Building Code states that alterations shall be permitted to be performed in accordance with the live, wind, and seismic load requirements set forth in the 1968 Building Code. Since the building occupancy types will not change with the proposed alterations, the required live loads are not changed. Since the proposed alterations do not change the wind surface area, the required wind loads are not changed.

According to the structural drawings, the work required to accommodate the library addition was designed in 1986. In 1986, the 1968 Building Code did not prescribe seismic loads. It was not until 1990 that an amendment to the Building Code referenced seismic design requirements from the Uniform Building Code and not until 1995 that Local Law #17, the Earthquake Code, was added as an amendment to the Building Code. Therefore, we presume that the existing Haaren Hall and the structural modifications to accommodate Lloyd Sealy Library were likely not designed to resist earthquake loads.

We have reviewed and compared the Code prescribed live, wind, and seismic loads in the 1968 and 2014 Building Code of the City of New York. For the proposed alterations, the 2014 Building Code allows the existing building structure to comply with the 1968 Building Code.

Live Loads - Per the 1968 Building Code and per the loading schedule provided in the drawings, the existing Lloyd Sealy Library floors (Basement Level and Entry Level) were designed for the following live load occupancy types:

1)	Storage	125 psf,
2)	Equipment Rooms	75 psf,
3)	Library (Stack)	150 psf,
4)	Library (Microfilm)	300 psf,
5)	Stairs	100 psf, and
6)	Corridors	100 psf.

The proposed alterations do not include changes to the occupancy types.

Wind Loads - The proposed alternations to Lloyd Sealy Library do not change the wind surface area; therefore, the required wind loads are not changed. It is our opinion that the existing building structure is likely adequate to resist the 2014 Building Code prescribed design wind loads.

Seismic Loads - As stated above, the existing AC structure was likely not designed to resist earthquake loads. The 2014 Building Code does require building structures to resist earthquake loads and references the procedures of ASCE 7-05 for the calculation of earthquake design loads.

Technical Policy and Procedure Notice #4/99 states that the Earthquake Code is applicable to new construction, but does not apply to alterations where there is no enlargement to the existing structure. Where the proposed work includes an enlargement to the existing structure, compliance with the Earthquake Code is not required where the existing foundations do not require reinforcement to carry the enlarged portion of the building.

Although the proposed alterations include an increase to the floor area at the Entry Level, the added floor area can be supported from existing columns. The foundations for these columns appear to be capable of supporting the increased column loads. We do not anticipate the need for reinforcing the existing foundations to support the new floor area. It is our opinion that the existing building structure will not need to be designed to comply with the Earthquake Code.

#### FEASIBILITY OF THE PROPOSED MODIFICATIONS

These proposed modifications are structurally feasible; although, the removal of the two masonry cores will be challenging, as the cores support a large portion of the Entry Level floor framing as well as a portion of the perimeter walls and floors at Levels 2, 3, 4, 5, Attic and Roof. In addition to the need for structural monitoring during the construction process, pre-construction surveys should be performed to determine the extent of any existing cracks or other distress in the portions of the building supported by these walls.

More detailed descriptions of the structural work required to accomplish these proposed alterations are provided in the following sections of this report.

#### Remove the Masonry Core Walls

The masonry core walls will be removed from the underside of Level 2 to the Basement Level, with portions of the walls removed to the Sub-Basement Level. Temporary structural shoring will be required to support the load currently supported by the masonry walls. The temporary shoring will extend through the Sub-Basement Level and will be founded on rock.

A staged construction process will:

- insert temporary shoring columns adjacent to the corners of the cores,
- shore beams and girders framing to the corners of the cores,
- demolish masonry and steel piers at the corners of the cores,
- install new columns at the corners of the cores,
- connect the existing framing to the new columns,
- shore the Level 2 beams connecting to the masonry walls,
- shore the masonry walls above Level 2,
- demolish the top of the masonry walls, below Level 2,
- install beams between the columns at the corners of the core,
- support the masonry walls above Level 2 from the new beams,
- connect the Level 2 framing to the new beams,
- demolish the masonry walls to the Entry Level and, at the Entry Level, repeat the process used for Level 2,
- demolish the masonry walls to the Basement Level,
- remove the temporary shores.

September 11, 2017 Page 7 of 17

During the shoring, demolition, and construction process, hydraulic jacks will be required to pre-load the temporary shoring columns and pre-load the new corner columns in order to minimize the vertical displacement of the structure during the transfer of load from the existing masonry walls to the temporary columns and from the temporary columns to the new columns and new beams.

Figures 4 through 11, below, describe the existing framing and loads that are tributary to the masonry cores that are to be removed, and show a staged removal process that includes the following:

- At each core corner, install four temporary structural shoring columns from the foundation level to the underside of the Second Floor framing. The shoring locations will need to be adjusted so as to miss the major framing at Entry Level and Basement Level. The shores will sit on temporary footings, founded on rock to reduce the possible settlement.
- 2. At the underside of the Second Floor framing, install support beams between the temporary columns to support the slabs, beams and girders supported by the masonry cores. The support beams are required at both the inside and the outside perimeter of the cores. Significant members to be supported are a North-South transfer girder that supports the perimeter masonry wall above Level 2, two East-West transfer girders that support the perimeter masonry walls above Level 2, and two East-West girders that support the Second Floor roof and skylight above the Entry Level.
- 3. At the underside of the Second Floor framing, install needle beams through the masonry walls and connect to the support beams. The needle beams, support beams, and support shores shall be pre-loaded by use of hydraulic jacks between the top of the support beams and the soffit of the members being supported. This pre-loading will help to reduce the likelihood of adverse deflections and settlements during subsequent demolition activities.
- After installation of the shoring and completion of the preloading, the corners of the masonry cores are to be removed between the underside of the Second Floor framing and the Foundation Level.



Figure 4 - Level 2 Framing Tributary to Masonry Cores



Figure 5 - Level 2 Shoring Demolition and Construction

- 5. Install new steel columns at the corners of the cores from the Foundation Level to the underside of the Second Floor. Install lintel beams at the Second Floor, beneath the needle beams at the inside and outside perimeter of the masonry core walls. Demo the top of the masonry wall to be removed to allow the core wall support girders to be installed between the new corner columns. Use hydraulic jacks to pre-load the new columns and girders and transfer the support of the Second Floor framing and walls to the new girders and columns.
- 6. Remove the core wall down to the Entry Level.



Figure 6 - Entry Level Framing Tributary to Masonry Cores



Figure 7 - Entry Level Shoring Demolition and Construction

7. At the underside of the Entry Level framing, install support beams between the temporary columns to support the slabs, beams and girders supported by the masonry cores. The support beams are required at the outside perimeter of the cores, framing inside the cores will be removed. Significant members to be supported include the North-South transfer girder that supports the floor framing located between the cores. Use hydraulic jacks to transfer load from the Entry Level framing to the support beams.



Figure 8 - Basement Level Framing



Figure 9 - Basement Level Shoring Demolition and Construction

- 8. Remove the framing inside the cores at the Entry Level. Remove the masonry core walls between the Entry Level and Basement Level.
- 9. At the Entry Level, install new support girders between the new columns at the perimeter of the cores. Use hydraulic jacks to transfer load from the Entry Level framing to the new support girders.
- 10. Remove the temporary shoring columns.



Figure 10 - Foundation Level Framing



Figure 11 - Foundation Level Shoring Demolition and Construction

#### Add Entry Level Floor Space

At the Entry Level (Floor 1), the proposed renovation includes the addition of floor space at the south side of the escalator opening. The area currently provides a two-story space above a library reading room. Existing building columns are located on all sides of the proposed additional floor area, so additional columns will not be required. See Figure 12.

The new floor area will be framed with steel beams, composite with a lightweight 3.5" concrete slab on 2" steel deck. Existing beams and columns that support the new floor area may need to be reinforced to support the increased load. Reinforcement of existing beams will be accomplished with added cover plates, welded to the existing beams. Reinforcement of existing columns will be accomplished with concrete encasement of the existing columns.

Existing foundations are shallow, spread footing on rock. The foundations for these columns appear to be capable of supporting the increased column loads. We do not anticipate the need for reinforcing the existing foundations to support the new floor area.



Figure 12 - Added Floor Area at Entry Level

#### Add an Entry Level Connection through the West Wall

At the Entry Level (Floor 1), the proposed renovation includes the addition of opening through the West wall of Haaren Hall to connect to the SOM-designed addition. The location of the proposed opening appears to occur in a non-structural CMU wall (for the SOM-designed addition) and a non-structural glass block window wall (for the Haaren Hall addition). Structural reinforcement will not be required for the new wall opening.

Some minor structural framing will be required to support the new stair and ramp at the connection through the new wall opening.

September 11, 2017 Page 17 of 17

#### DISCLAIMER

The review of an existing building requires that assumptions be made regarding existing conditions, some of which may not be verifiable within the constraints afforded to LERA. We have not completed an examination of the Lloyd Sealy Library at John Jay College, relying instead on such drawings as have been made available to us and on information that has been provided to us.

The opinions expressed in this report represent our professional view, based on the information made available to us. In developing these opinions, we have exercised a degree of care and skill commensurate with that exercised by reputable structural engineers of this location. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Respectfully submitted, LESLIE E. ROBERTSON ASSOCIATES, R.L.L.P.

Elias S. Matar Project Director W. John Pugh Project Manager

APPENDIX 8.2

**MEP/FP REPORT** 

#### I. INTRODUCTION

- A. John Jay College of Criminal Justice building is located between 10<sup>th</sup> and 11<sup>th</sup> Avenue of Manhattan, New York City. College building was originally constructed as Dewitt Clinton High school in 1906. In 1990, alteration and addition to the original building was completed and it was named as Haaren Hall building. In 2007, addition to the Haaren Hall building was completed and it was named as Main building.
- B. The Lloyd Sealy Library in Haaren Hall building is located on cellar and entry levels and approximate floor area is 66,000 GSF.
- C. A field survey for feasibility study was performed on August 9<sup>th</sup> and 23<sup>rd</sup>, 2017 to observe the existing conditions of Mechanical, Electrical and Plumbing (MEP) and Fire Protection (FP) systems. The capacities, age and operation of MEP and FP systems were reviewed with facilities staff. The observations included in this report are a compilation resulting from the field survey, discussion with facilities staff, and review of available existing drawings. Reuse of existing MEP&FP systems and development of new MEP &FP systems are determined based on the program of the new Library.

#### II. DESCRIPTION OF FIRE PROTECTION SYSTEM

#### A. FIRE PROTECTION – FINDINGS

- 1. The Building is fully sprinklered. The existing 6" Sprinkler service and the Fire Pump are located in the Sub-Cellar Level. See photos FP-1 to FP-3.
- 2. A separate chemical fire suppression system is provided for the rooms in Special Collection areas in the Cellar. See photo FP-4.
- 3. Existing Building Server Room is provided with fire suppression system. However, the Server room will be enlarged under this project.
- 4. New Special Collection area is proposed on the Cellar Level.

#### **B.** FIRE PROTECTION – RECCOMENDATIONS

- 1. The existing Sprinkler service and sprinkler main piping will remain. However, all the existing branch piping and sprinkler heads will be replaced with new in coordination with the proposed Architectural plans.
- 2. Existing Chemical Fire Suppression System in special collection areas in the Cellar will remain.
- 3. A new Chemical Fire Suppression System (NOVEC 1230 or equal) with back-up redundant reserve of chemical agent cylinders equal to the primary supply will be provided for the proposed enlarged Building Server Room.



4. A new Chemical Fire Suppression System (NOVEC 1230 or equal) with back-up redundant reserve of chemical agent cylinders equal to the primary supply will be provided for the proposed Special Collection area in the Cellar.

#### **III. DESCRIPTION OF PLUMBING SYSTEM**

#### A. PLUMBING FINDINGS

- 1. The Building is provided with an existing 4" Domestic Cold Water Service. The Cold Water is distributed to the building through an existing Water Booster Pump located in the Sub-Cellar Pump Room. Domestic Hot Water for the Building is generated by the existing duplex steam to hot water Heat Exchanger located in the Sub-Cellar Pump Room. See photos P-1 to P-3.
- 2. The existing 2-story Library has eight (8) Toilet Rooms [four (4) in each floor]. Overall, there are eight (8) water closets, two (2) urinals, and twelve (12) lavatories in the Cellar Level, in addition to ten (10) water closets, two (2) urinals, and twelve (12) lavatories in the Entry Level.
- 3. New toilet rooms are proposed on the Cellar Level.
- 4. New elevator is proposed for Library spaces.

#### **B. PLUMBING RECOMMENDATIONS**

- 1. The existing Booster Pump, Cold Water, Hot Water and Sanitary mains will remain.
- 2. All the plumbing fixtures as shown on the existing Architectural plans will be removed and replaced with new. New fixtures piping will be tied to the existing main plumbing piping.
- 3. New fixtures as shown on the proposed Architectural plans will be tied to the existing main plumbing piping.
- 4. New elevator sump pump and associated piping and controls will be provided.
- 5. New gas line or diesel fuel tank will be provided for new emergency/standby generator. Type of fuel and capacity will be evaluated further in design phase.

#### IV. DESCRIPTION OF HVAC SYSTEM

#### A. HVAC FINDINGS

#### 1. EXISTING CENTRAL COOLING AND HEATING PLANT

a. In 2012, under Backfill Chilled Water Infrastructure project, the existing HVAC system was upgraded for Haaren Hall Building including the Air-conditioning in the existing



Library spaces. The existing old DX AC units were replaced with chilled water Air Handling Units (AHU's) and new Dedicated Outdoor Air Unit (MAU-1) was provided.

- b. The new Chilled Water system located in the main Building Penthouse/consists of the following (See photos M1 to M6):
  - i. Three (3) 1200-ton York water cooled chillers (each)
  - ii. Three (3) primary constant speed chiller circulation pumps,
  - iii. Three (3) secondary variable speed building circulating pumps,
  - iv. Three (3) condenser water pumps,
  - v. Three (3) cooling towers and
  - vi. Two (2) plate and frame free cooling heat exchangers
- c. A 5" Con-Edison steam service from 58<sup>th</sup> street is distributed to the Haaren Hall Building AHU's, MAU-1, Steam humidifier, Steam to hot water Heat Exchanger and Steam to domestic hot water Heat Exchanger. See photo M7.
- d. Space heating for Haaren Hall Building is served by two (2) Steam to Hot Water Heat Exchangers that are located in the sub-cellar mechanical pump room (See photo M8). Hot water is distributed by two (2) hot water pumps to the convectors and finned tube radiators.

#### 2. CELLAR LEVEL LIBRARY SPACES

- a. Cellar Level Library spaces are served by two (2) existing Variable Air Volume (VAV) Air Handling Units (AHU-L-1 & AHU-L-4). AHU's are equipped with filter, chilled water coil, steam heating coil and supply fan.
- b. The AHU's are located in Mechanical Rooms LM05 and LM08. See photos M9, M10 and tabulated information below:

Unit No.	Manufacturer	Location	Total Air CFM	OA CFM	Chilled water Flow (GPM/Ton)	Steam Capacity in lb/hr
AC-L-1	INGENIA	LM08	23000	5000	186/78	1024
AC-L-4	INGENIA	LM05	7000	1700	57/24	312

- c. The fresh air for the AHUs is supplied through open ended exterior louvers. Return air from the ceiling plenum and outdoor air from existing external wall louvers is mixed in the mechanical room (See photo M11).
- d. The supply air is distributed from AHU to the Library spaces through the non-fan powered VAV boxes. VAV boxes are controlled by room thermostats. VAV boxes are original to the building except for the VAV controllers that was added in 2012.



- e. Space heating is provided by the existing hot water fin tube radiators along the perimeter wall. Radiators are controlled by an existing pneumatic control valve and room thermostat.
- f. For pressurization purposes, portion of return air from Cellar Level ceiling is exhausted to outside through general exhaust fans (GX-4) and a ductwork. For existing general exhaust air flow schematic refer to Sketch M-1.
- g. Post Fire Smoke Purge Fans (SE-1, SE-2 & SE-7) are provided for Cellar Level spaces.
- h. Vestibules and stairwells within the Cellar Level Library area are served by Electric Cabinet Unit Heaters.

#### 3. ENTRY LEVEL LIBRARY SPACES

- a. Entry Level Library spaces are served by a three (3) existing multi zone Variable Air Volume (VAV) air handling units (AHU-L-2, AHU-L-3 & AHU-L-5). Air Handling Units (AHU's) are equipped with filter, chilled water coil, steam heating coil and supply fan.
- b. AHU-L-2 and AHU-L-3, located in Mechanical Rooms 1M05, serves the Entry Level Library Spaces. See photos M12, M13 and tabulated information below:

Unit No.	Manufacturer	Total Air CFM	OA CFM	Chilled water Flow (GPM/Ton)	Steam Capacity in lb/hr
AC-L-2	INGENIA	20500	3320	166/70	913
AC-L-3	INGENIA	22000	4000	178/75	980

- c. Tempered fresh air for AHU-L-2 and AHU-L-3 are supplied from Make-up Air Unit (MAU-1) located on the Haaren Hall Building's Main Roof. Return air from the ceiling plenum and outdoor air from existing MAU-1 is mixed in the mechanical room (See photos M16 to M19).
- d. The supply air is distributed from AHU to the Library spaces through the non-fan powered VAV boxes. VAV boxes are controlled by room thermostats. VAV boxes are original to the building except for the VAV controllers that was added in 2012.
- e. Space heating is provided by the existing hot water fin tube radiators along the perimeter wall. Radiators are controlled by an existing pneumatic control valve and room thermostat. See photo M22.
- f. AHU-L-5 located in Mechanical Room 11207, serves the Entry Level Reading Rooms/Reference Area. See AHU information tabulated below:



Unit No.	Manufacturer	Total Air CFM	OA CFM	Chilled water Flow (GPM/Ton)	Steam Capacity in lb/hr
AC-L-5	INGENIA	10000	2000	81/35	445

- g. Fresh air for AHU-L-5 is supplied through an intake louver penthouse on low roof. Return air is transferred to AHU through an Entry Level ceiling plenum.
- h. Supply air from the AHU is distributed to the reading room through supply grilles (See photos M21).
- i. Smoke exhaust fans (SE-3 & SE-4) located in the mechanical rooms are provided to purge the post fire smoke from double height reading room spaces. Smoke exhaust penthouse louvers are located on the roof above atrium (Refer to photograph M 15).
- j. Main Entrance on Entry Level is served by existing Electric Cabinet Unit Heaters.

#### 4. TOILET EXHAUST

a. Toilets on cellar and Entry Level are served by existing toilet exhaust fans (TX- 2, TX- 3, TX-5 AND TX-6) and these units are located on the Haaren Hall Building Main Roof.

#### 5. BUILDING SERVER ROOM

a. Server Room for Haaren Hall Building is located on the cellar level. Existing AC unit in the server room does not have adequate cooling capacity as per facilities staff.

#### 6. LIBRARY SERVER ROOM

a. A new Library server room is proposed on the Entry Level.

#### 7. SPECIAL COLLECTION AREA

a. Existing special collection area on Cellar Level is served by two (2) existing Fan Coil Units (LPCA-1 and LPCA-2). Units are to remain in place as this area is not in the scope of work.

#### 8. CONTROL SYSTEMS

- a. VAV boxes controllers were originally installed in 1990 with pneumatic controls. In 2012, under Backfill Chilled Water Infrastructure project, controls of the VAV boxes and AHU's were upgraded from pneumatic controls to Siemens DDC controls.
- b. VAV box controls are connected to AHU via MSTP networks in functional manner. Cellar and Entry Level library AHU controllers are connected to Network Service Panel (NSP) located on the cellar level. NSP is tied to the Central BMS located in the penthouse roof of the main building. (Refer to photo M 20).



John Jay College of Criminal Justice The City University of New York Haaren Hall –Lloyd Sealy Library September 18, 2017 Page 6

#### **Feasibility Report**

- c. Existing fans and fin tube radiators are controlled by an existing pneumatic control system.
- 9. Refer to Schematic Sketches SK-M1, SK-M3 and SK-M4 for Existing Condition.

#### **B.** BASIS OF DESIGN FOR THE PROPOSED HVAC SYSTEM:

1. Heating and Cooling Load Calculations will be in accordance with ASHRAE Fundamentals Handbook.

#### 2. Heating:

- a. Indoor design conditions:
  Occupied Design Temperature: 72°F DB
  Unoccupied Design temperature: 55°F DB
- b. Outside design conditions: The Heating Design Temperature will be 11°F per with 99.6% weather data (NY Kennedy Airport).

#### 3. <u>Cooling:</u>

- a. Indoor design conditions: Occupied Design temperature: 75°F DB, 50% Relative Humidity Unoccupied design temperature: 85°F
- b. Outside design conditions: The Cooling Design Temperature will be 89°F Dry Bulb Temperature and 73°F Coincident Wet Bulb Temperature.
- 4. Building/ Library server rooms will be maintained at 75°F of dry bulb temperature and a maximum 55% relative humidity.
- 5. <u>Ventilation:</u> The fresh air requirements will be in accordance with Section MC 403.3, Ventilation Requirements.
- 6. <u>Noise Criteria:</u> Spaces will be designed to meet the following maximum Background Sound Noise Criteria:

<b>LOCATION</b>	<u>A-WEIGHTED</u> <u>SOUND</u> <u>LEVEL (DBA)</u>	<u>NOISE</u> <u>CRITERA</u> <u>(NC)</u>
General Circulation/Lobby Areas	50	45
Library/Reading Rooms	45	40



#### C. HVAC RECOMMENDATIONS

#### 1. CENTRAL COOLING AND HEATING PLANT

a. Existing Central Cooling/Heating Plant and the distribution system will remain for reuse.

#### 2. PROPOSED CELLAR LEVEL LIBRARY SPACES:

- a. Existing Air Handling Units AHU-L-1 and AHU-L-4 are in good condition and has adequate capacity to condition the proposed renovated spaces in Cellar Level. The Existing Air Handling Units AHU-L-1 and AHU-L-4 will remain for re-use.
- b. Existing return air plenum ductwork in Mechanical Rooms LM05 and LM08 will remain for reuse.
- c. Existing open ended exterior intake louvers in Mechanical Rooms LM05 will remain for reuse.
- d. Existing open ended exterior intake louver and a ductwork for AHU-L-4 will remain for reuse.
- e. All existing supply air ductwork, insulation, VAV boxes and associated diffusers will be removed and replaced with new to coordinate with the proposed Architectural renovation. The VAV box will be sized in a range of 1000-1200 CFM and each VAV box will serve approximately 700 to 800 SF of open spaces. Approximately 2-3 small perimeter offices will be served by a single VAV box.
- f. Existing fin tube radiators, associated piping, accessories, valves and wall thermostats for space heating will be removed and replaced with new Runtal wall mounted radiators. New Radiators branch piping will be connected to the existing hot water risers.
- g. Existing general exhaust fans (GX-1, GX-2 and GX-3), toilet exhaust fan (TX-1) and smoke exhaust fan (SE-8) and their associated ductwork located in the cellar ceiling will remain in place.
- h. Post Fire Smoke Purge Fans (SE-1 & SE-2) and their associated ductwork will be removed and replaced with new fans and ductwork. New ductwork will be connected to the existing smoke purge louver. Post Fire Smoke Purge Fan SE-7 and associated ductwork will remain.
- i. Existing Electric Cabinet Unit Heaters along with associated accessories within the proposed Architectural renovation will be removed and replaced with new.


### 3. PROPOSED ENTRY LEVEL LIBRARY SPACES

- a. Existing Air Handling Units AHU-L-2 and AHU-L-3 are in good condition and has adequate capacity to condition the proposed renovated spaces. The Existing Air Handling Units AHU-L-2 and AHU-L-3 will remain for re-use.
- b. Existing return air plenum ductwork in Mechanical Rooms 1M05 will remain for reuse.
- c. Existing Make-up Air Unit (MAU-1) provides adequate fresh air for the proposed Entry Level spaces and will be re-used.
- d. All existing supply air ductwork, insulation, VAV boxes and associated diffusers will be removed and replaced with new to coordinate with the proposed Architectural renovation. The VAV box will be sized in a range of 1000-1200 CFM and each VAV box will serve approximately 700 to 800 SF of open spaces. Approximately 2-3 small perimeter offices will be served by a single VAV box.
- e. Existing fin tube radiators, associated piping, accessories, valves and wall thermostats for space heating will be removed and replaced with new Runtal wall mounted radiators. New Radiators branch piping will be connected to the existing hot water risers.
- f. Existing Air Handling Unit, AHU-L-5 along with associated ductwork, chilled water piping, steam and condensate piping, valves and controls will be removed due to the relocation of existing mechanical room.
- g. A new 16000 CFM Air Handling Unit (New AHU-L-5) will be provided with a chilled water coil of approx. 540 MBH and steam pre heat coil of 545 MBH to meet the proposed occupancy, lighting and equipment loads. Chilled water and steam for new AHU will be tied to the existing main pipes. AHU will be equipped with air side economizer. Outdoor air for new AHU will be supplied through a new outdoor air louver, inline fan and a ductwork.
- h. Supply air from the new AHU will be distributed to the spaces on Entry Level with new VAV boxes and diffusers.
- i. Smoke exhaust fans (SE-3 and SE-4) and their associated ductwork and penthouse louvers will be removed due to conflict with the proposed Entry Level layout. New smoke exhaust fans purge fans (SE-3 and SE-4) and the associated ductwork will be provided.
- j. Existing Electric Cabinet Unit Heaters along with associated accessories within the proposed Architectural renovation will be removed and replaced with new.



### 4. PROPOSED TOILET EXHAUST:

a. Existing Toilet exhaust fans (TX-2, TX-3, TX-5 and TX-6) serves the entire Haaren Hall Building and will remain. However, existing ductwork located in the Entry Level ceiling will be removed and rerouted and tied into the existing exhaust duct risers.

## 5. PROPOSED BUILDING SERVER ROOM:

a. Existing unit in server room will be removed and replaced with new 20 ton Liebert or equal, ductless AC units with a condensing unit installed outside on roof above atrium. Unit will be tied to the new emergency/ standby generator for backup power.

## 6. PROPOSED LIBRARY SERVER ROOM:

a. Library server room on Entry Level will be provided with a new 2-Ton split system. The new outdoor unit will be located on the roof above atrium. Unit will be tied new emergency/ standby generator for backup power.

## 7. PROPOSED SPECIAL COLLECTION AREA:

- a. Proposed Special Collection area on Cellar Level will be provided with a dedicated new 5-Ton (Approx.) Fan Coil Unit (FCU). FCU will be provided with chilled water coil, filter and supply fan.
- b. Supply air from FCU will be distributed to the space with a duct steam humidifier and diffusers.

### 8. PROPOSED CONTROLS SYSTEM:

- a. All new VAV boxes wil be provided with new DDC controllers. New Controllers will be connected to AHU via MSTP networks.
- b. AHU controllers will be reprogrammed as per new VAV box layout. Library AHU controllers are connected to Network Service Panel (NSP) located on the cellar level. NSP is connected to the Central BMS.
- c. New smoke exhaust fans and fin tube radiators controllers will be upgraded from existing pneumatic control system to Siemens DDC control system.
- d. All new DDC controllers will be tied to the existing central BMS system.
- 10. Refer to Schematic Sketches SK-M2, SK-M3 and SK-M4 for Proposed HVAC System.



## V. ELECTRICAL AND FIRE ALARM SYSTEM

### A. ELECTRICAL FINDINGS

### 1. SUB-CELLAR LEVEL

- a. The Main Electrical Service to the Building is 120/208V, rated at 4000A from Consolidated Edison to the Electrical Service Room in Sub-Cellar level.
- b. There are four (4) Main Switchboards (MS) that feed the entire building. Two (2) switch and fuse type distribution boards 'MS-C' and 'MS-D' feed the cellar and entry Level of the Library areas.
- c. There is an existing 350KW, 120/208V Diesel Generator (Kohler) with 1200A Automatic Transfer Switch (ATS) in Generator Room on Sub-Cellar Level. There is a 275 Gallon capacity fuel tank to store the fuel for Emergency Generator in this room.
- d. Emergency Generator 1200A Distribution board 'ESDB' feeds various panel boards, motor control center, Emergency lighting, Exit Signs, Stairwell Lighting, Elevators, Fire Pump, Fire Alarm System and Theatre ATS in the building.

## 2. CELLER LEVEL

- a. Distribution Panel 'PP-01' (600A) located in Electric Closet M-02 feeds Panels 'LP-CA', 'LP-CB' and 'LP-CC' on the Cellar level.
- b. Panels 'LP-CA', 'LP-CB' and 'LP-CC' each with 225A lugs only panels are located throughout the Cellar level. See Sketch SK-E1 for all existing panel locations.
- c. All power receptacles and lighting loads on this floor are fed from the three (3) Panels.
- d. Lighting Panel 'LP-CE' (100A Lugs only) located on Cellar level is fed from 'ESDB' which feeds the emergency lighting and Exit Sign on Cellar Level.
- e. There are existing General Electric Relay based Lighting Control Panels 'LVR-CA' and 'LVR-CB' for switching lighting on the Cellar Level.
- f. There are wall mounted exit signs and fluorescent lighting fixtures throughout the building.
- g. A Siemens Fire Alarm Control Panel (XLSV) is located in Cellar level Atrium Lobby that feeds all the fire alarm devices in the building.
- h. There are Pull Stations and Warden Phones by the Stairwells and combination surface mounted Speaker/Strobe devices throughout the floor.
- i. The building has IT Server room in Cellar level.
- j. All of the lighting fixtures, lighting controls, exit signs, power receptacles wall and floor mounted, data/Voice outlets and wireless access points will be removed in their entirety back to source Panelboards.
- k. Panels 'PP-C3' feeds the Escalators and lifts and 'PP-C4' feeds the mechanical equipment in the building.



1. Existing Public Address System and Security System will be replaced with new.

## 3. ENTRY LEVEL

- a. Distribution Panel 'DP-1' (800A) located in Electric Closet 1M-02 on Entry Level feeds seven (7) Panels on this floor.
- b. All these Panels located throughout the Entry level feed the Power and lighting loads on this floor. See Sketch SK-E1 for all panel locations.
- c. Lighting Panel 'LP-1E' (225A Lugs only) on the Entry Level fed from 'ESDB' feeds the emergency lighting and Exit Signs on Entry Level.
- d. There are existing General Electric Relay based Lighting Control Panels 'LVR-EA', 'LVR-EB', 'LVR-EC' and 'LVR-ED' for switching lighting on the Entry Level.
- e. There are wall mounted exit signs and fluorescent lighting fixtures throughout the building.
- f. All fire alarm devices on this floor are fed from Fire Alarm Control Panel (FACP) located in Cellar level Atrium Lobby.
- g. There are Pull Stations and Warden Phones by the Stairwells and combination surface mounted Speaker/Strobe devices throughout the floor.
- h. All of the lighting fixtures, lighting controls, exit signs, power receptacles wall and floor mounted, data/Voice outlets and wireless access points will be removed in their entirety back to source Panelboards.
- i. Panel 'PP-1' and 'PP-1A' located on Entry level feeds the mechanical equipment on this floor.
- j. Existing Public Address System and Security System will be replaced with new.

## **B. ELECTRICAL RECOMMENDATIONS:**

### 1. Reference Standards:

- a. 2014 New York City Fire Code
- b. Energy Conservation Construction Code of New York State, 2016
- c. NFPA 72 Fire Standards
- d. Fire Department Division of Fire Communications

## 2. SUB-CELLER LEVEL

- a. Existing main distribution system to remain.
- b. Emergency Generator will feed the new emergency lighting and Exit signs on Cellar and Entry Level through new panelboards. However in order to determine what can be



added to the emergency system, it is necessary to determine the existing equipment loads presently on the generator system.

- c. The generator system appears to be modified in 1987 as noted on the existing one line diagram. The present installation does not appear to be in compliance with the National Electric Code with reference to dedicated ATS for emergency lighting to be energized within 10 seconds of power failure. The existing loads have the generator operating at capacity.
- d. Further survey of the entire generator system is required in order to consider any added equipment on the generator.
- e. A 150KW/187.5kVA emergency/standby Natural Gas or Diesel fuel powered generator is recommended to power the 20 ton A/C equipment in the building server room, Library Server room plus the emergency lighting in the library renovation area.

## 3. CELLER LEVEL AND ENTRY LEVEL

- a. All power and lighting panels indicated above will be replaced with new 42-pole panelboards and new feeders from main distribution board, installed at the same locations on both the levels.
- b. All horizontal branch wiring will be new to all new power outlets and lighting fixtures via new lighting controls throughout the floor.
- c. Every seat (approximately 250 seats on Cellar level and 650 seats on Entry level) will have access to a duplex power receptacle and one USB port powered from new power panels located throughout the floor.
- d. Fire rated floor boxes (FB) with power and data outlets will be provided at each table cluster and will feed the table outlets on Cellar level.
- e. Fire rated Poke-Thrus will be provided at each table cluster and will feed the table outlets on Entry level.
- f. Group study rooms will be provided with wall mounted duplex receptacles and data outlets. Empty conduits with pull string and backboxes will be provided for all data outlets.
- g. New Wireless Access Points (WAPs) will be provided with empty conduits throughout the Cellar and Entry level.
- h. New high energy efficient LED lighting fixtures will be provided throughout on both the levels.
- i. Lutron lighting controls will be provided throughout the space in accordance with NYC 2016 Energy Conservation code and Ashrae 90.1 code.



- j. New programmable lighting control panels will be installed in the Electric Closets and will be connected to local lighting panels for automatic interior lighting shutoff.
- k. Corridor non-emergency lighting will be provided with integral built-in occupancy sensors.
- 1. All occupancy sensors will be motion/heat activation technology.
- m. Individual offices and group study rooms will be provided Low-voltage switch/ Dimmer switch and Vacancy sensor to control lighting.
- n. Emergency lighting will be powered from emergency lighting panel and controlled from key operated switch at the entrance of each level.
- o. LED exit signs will be installed throughout both the floors and powered from the emergency lighting panel.
- p. All new addressable fire alarm devices will be installed and connected back to the existing FACP located in the Cellar Level Atrium as per NFPA 72 Fire Standards.
- q. All Elevator lobbies will be provided with new smoke detectors as per NFPA 72 code.
- r. New Public Address System and Security System will be provided for the Cellar and Entry level of the Library.
- s. New IT Server room power requirements (new racks) will be provided via power panels on Cellar level
- t. Toilet flushometers and water closets will be powered from new Power Panels.
- u. Drinking fountains will be powered from power panels on Cellar level.
- v. New IT Server room 20-ton AC unit will be powered from distribution board on cellar level.
- w. New Mechanical room equipment (AHU unit) and corresponding control panel will be powered from power panel on Cellar level.
- x. New mechanical VAV boxes will be powered from panels on Cellar and Entry level.



# **Feasibility Report**



Photo FP3-Incoming Fire Service Assembly

Photo FP4-Chemical Fire Suppression System



# **Feasibility Report**

A&J PROJECT No. 2116



Photo P1-Incoming Domestic Water Service Assembly

Photo P2-Existing Domestic Water Pumps



Photo P3-Existing Domestic HW Heaters



# **Feasibility Report**





# **Feasibility Report**



Photo M7-Steam Meter Room



Photo M9-AHU-L1



Photo M10-AHU-L-4



Photo M12-AHU-L-2





# **Feasibility Report**

A&J PROJECT No. 2116



Photo M13- AHU-L-3



Photo M14-AHU-L-5



Photo M15-Smoke Purge Exhaust





Photo M17-MAU-1



Photo M18-MAU-1









# **Feasibility Report**





## **Feasibility Report**



















APPENDIX 8.3

DETAILED EXISTING COLLECTION ANALYSIS

### APPENDIX 8.3 DETAILED EXISTING COLLECTION ANALYSIS

Updated June 28, 2017 (blue notes represent comments from 6/7/17 meeting) June 7, 2017

### **EXISTING COLLECTION ANALYSIS**

#### **General Collection**

220,000 vol. - currently static (approximately 2000 v. weeded + 2000 v. purchased -annually average) (approx.. additional 5,000 vol. circulating on average) Assume reduce 25% = 165,000 volumes

Assumptions for growth

Assume continue to weed annually ½% (1%)collection per year = 1000 vol. (2000 vol./ year) Assume continue to purchase 2000 vol./year for next 25 years on average Net growth to collection 1000 vol./year x 25 years = 25,000 vol.- weed and growth will be static Total General Collection in 25 years = 250,000 vol. Total= 165,000- 200,000 vol.

Assumptions for planning / size

Shelving 175 vol./ SFS; need 1428 SFS or 714 DFS / **1142 SFS or 570 DFS** 715 DFS x 15sf/DFS = 10,714 nsf x 1.25 circulation = **13,500 SF** / **10,687 SF** in compact mobile storage assume 50% reduction = **7000 SF** / **5343 SF** 

#### Bound Periodicals (can be in remote & compact)

34,200 vol. currently (and shrinking)

Assumption for size

assume 2% reduction/year for next 5 years (before project complete) = 684 vol. x 5 yr. = 3,420 vol. <u>Total Bound Periodical Collection (weed + purchase to remain static)</u> = **30,000 vol. (ok, max out at this)** 

Assumption for planning / size

Shelving 150 vol. / SFS; need 200 SFS or 100 DFS 100 DSF x 15sf/DFS = 1,500nsf x 1.25 = 1,875 SF / **2000 SF** In compact mobile storage assume 50% reduction = **1000 SF** 

### Law Reference Collection (TO BE INTEGRATED WITH GENERAL COLLECTION)

23,800 vol. currently (and shrinking) / can be reduces by 2/3

Assumption for size

Assume 2% reduction/year for next 5 years (before project complete) = 476 vol. x 5 yr. = 2,380 vol. Total Law Reference Collection (weed + purchase to remain static) = **21,420 vol.** / **8,100 vol.** 

Assumption for planning / size

Shelving 125 vol./ SFS; need 171 SFS or 86 DFS / 65 SFS or 32 DFS 86 DFS x 15sf/ DFS = 1,290 nsf x 1.5 = 2000 SF / 720 SF In compact mobile storage assume 50% reduction = 1000 SF / 360 SF

#### **Closed Special Collections**

1,627 linear feet currently to store all books and boxes (incl. all current books + 527 loose boxes)

Assumptions for growth

Assume growth equivalent of 100 boxes per year for 25 years = 2500 boxes = 2500 linear feet Total linear feet needed = 1627 lin.ft + 2500 lin. ft. = **4,127 linear feet of storage** Additional space for (8 laterals, 6 3-drawer files, 2 5-drawer files, 3 microforms, 2 flat files) = **300 SF** 115 DFS x 15 sf/ DFS = 1725 sf x 1.25 = **2156 NSF + 300 SF = 2456 NSF** Police Blotters: 880 boxes = 400 linear feet shelving / **no growth here in future**  *assume modest growth to 1000 boxes* = 500 linear feet shelving or 14 DFS x 15sf/DFS =**210 NSF** *this can be moved into archival location of closed special collection* 

In compact mobile storage assume 50 % reduction = 1078 SF + 300 SF + 210 = 1378 NSF / 1588 NSF

#### **EXISTING COLLECTION ANALYSIS CONTINUED...**

#### **Open Special Collections (THIS COULD BE INTEGRATED INTO REFERENCE & can be in compact mobile)**

Open special collection: 11,520 vol. / to remain static- no growth Assume 1% growth/year for 25 years= 115 vol./year = 2880 vol. Total open special collections = 14,400 vol. 82 SFS or 40 DFS x 15sf/ DFS = 600 nsf x 1.25 = 1000 NSF

Total Area needed for Open Special Collections = 1,210 NSF / 1000 NSF

#### **General Reference Collection**

33,288 vol. (assume remaining static) / assume 20,000 vol. hold static

Assumptions for planning / size

Shelving 150 vol./ SFS; need 221 SFS or 110 DFS x 15sf/ DFS = 1650 nsf x 1.5 (actual) = 2,500 NSF 133 SFS or 67 DFS = 1500 NSF

### **Ready Reference Collection**

1000 vol. (assume remaining static) / assume 50% reduction = 500 vol.

Shelving 135 vol./SFS; need 8 SFS or 4 DFS x 15 sf/DFS = 60 NSF / 4 SFS or 2 DFS = 30 NSF

#### **Browsing Collection**

350 vol. new books = 3 SFS = 30 NSF

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Assumptions for growth
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Assume adding 36 casual periodicals in low profile display/tilt/ storage units = 108 NSF

Total Area needed for Browsing Collection= 168 NSF

#### Microforms Collection (can be remote)

27 cabinets (2' x 2.5' x 4' or 8') = 135 nsf x 1.33 = 180 NSF 2 cabinets (1.5' x 3') = 4.5 nsf x 1.33 = 6 NSF

Total Area needed for Microform collection = 200 NSF

### Access Services Collection

#### Reserve

5200 vol. Assume no change Shelving 175 vol/ SFS = 30 SFS or 15 DFS = **550 SF** 

#### AV/Media (may have small growth)

14 cabinets (3' x7') / **16 cabinets** Assume no change = **200 SF / 250 NSF** 

### Interlibrary Loan

24 linear feet open shelving total = 6 NSF

Total Area needed for Microform collection = 200 NSF

APPENDIX 8.4

### PROPOSED LIBRARY ENTRY SEQUENCE

# APPENDIX 8.4 PROPOSED LIBRARY ENTRY SEQUENCE



### Proposed Cellar Level Plan

Outside of Renovation Scope

····· Proposed Library Entry Sequence

## APPENDIX 8.4 PROPOSED LIBRARY ENTRY SEQUENCE



····· Proposed Library Entry Sequence



### Existing Building Section

Existing Lloyd George Sealy Library

Proposed Library Entry Sequence

APPENDIX 8.5

ARCHITECTURAL COST ESTIMATE DRAWINGS




























