



Burt Hill  
Kosar Rittelmann  
Associates

Architecture  
Engineering  
Interior Design  
Research

Shippensburg University  
SU Project #: SU-2002/6

## Ezra Lehman Memorial Library Addition Feasibility Study

1735 Market Street  
53rd Floor  
Philadelphia, PA 19103-2921  
215.751.2900  
FAX 215.751.2901

April 26, 2004  
Burt Hill Project #: 02938.00

© Burt Hill Kosar Rittelmann Associates, 2004

**SHIPPENSBURG UNIVERSITY**  
**SU – 2002/6**

**Table of Contents**

Section

- A. EXECUTIVE SUMMARY
  - 1. Purpose and Goal
  
- B. ADDITIONAL FEASIBILITY STUDY
  - 1. Description of Selected Option and Program
  - 2. Program by SSHE Space Guidelines
  - 3. Program by Floor
  - 4. Architectural Building Survey & Report
  - 5. Building Code Requirements
  - 6. M.P.E. Survey and Report
  - 7. Structural Review and Report
  - 8. Preliminary Probable Costs
  - 9. Phasing Plan
  - 10. Schematic Drawings
    - a. Site Plan
    - b. Ground Floor Plan
    - c. First Floor Plan
    - d. Second Floor Plan
    - e. North and East Elevations
    - f. South and West Elevations
    - g. Rendering
    - h. Model Photos
  
- C. EVALUATION
  - 1. Evaluation Criteria
  - 2. Evaluation Summary and Conclusions
  
- D. PROCESS - PRELIMINARY PROGRAMMING SCHEMES
  - 11. November 1, 2002 Submission
    - a. Scheme 'A'
      - 1. Ground Floor Plan
      - 2. First Floor Plan
      - 3. Second Floor Plan
    - b. Scheme 'B'
      - 1. Ground Floor Plan
      - 2. First Floor Plan
      - 3. Second Floor Plan
    - c. Scheme 'C'
      - 1. Ground Floor Plan

- 2. First Floor Plan
    - 3. Second Floor Plan
  - d. Concept Overview (Scheme's A, B, and C)
  - e. Comparative Budgets
- 2. November 19, 2002 Submission
  - a. Scheme 'A'
    - 1. Ground Floor Plan
    - 2. First Floor Plan
    - 3. Second Floor Plan
  - b. Scheme 'B'
    - 1. Ground Floor Plan
    - 2. First Floor Plan
    - 3. Second Floor Plan
  - c. Scheme 'C'
    - 1. Ground Floor Plan
    - 2. First Floor Plan
    - 3. Second Floor Plan
  - d. Concept Overview
  - e. Comparative Budgets
- 3. February 28, 2003 Submission
  - a. Conceptual Plans (Ground, First, and Second Floor Plans)
  - b. Massing Study Sketches
- 4. August 2003 Submission
  - a. Conceptual Floor Plans and Elevation Study Sketches

#### E. EXISTING CONDITIONS

- 1. Site Plan
- 2. Ground Floor Plan
- 3. First Floor Plan
- 4. Second Floor Plan
- 5. Roof Plan
- 6. North & East Elevations
- 7. South & West Elevations

#### F. MEETING MINUTES

- 1. Meeting Minutes, February 28, 2003
- 2. Meeting Minutes, May 5, 2003
- 3. Meeting Minutes, January 13, 2004

#### Reference

- 1. Outline of Room Use Codes Space Guidelines
- 4. SSHE definition of space and functional requirements
- 5. Asbestos Identification, Assessment and Management Planning, June 28, 1996  
by Volz Environmental Services, Inc.

EZRA LEHMAN MEMORIAL LIBRARY  
ADDITION FEASIBILITY STUDY

EXECUTIVE SUMMARY

Purpose: To develop a feasibility study and conceptual design for an addition and renovation to the Ezra Lehman Memorial Library.

Goal: Shippensburg University desires to incorporate a new writing center as part of the existing Ezra Lehman Memorial Library. The new writing center should enhance the resources available to the student body while acting as an outreach center to the surrounding community as a whole. Space for archives, classrooms and interactive learning should also be included. This study should also determine how the new writing center would be incorporated into the existing library, both physically and programmatically, and how the new programmatic functions may impact the existing library. Finally, the State System of Higher Education Space and Functional Guidelines should be used to develop the programmatic layout and conceptual design for the addition and renovation of the existing library.

**SHIPPENSBURG UNIVERSITY**  
**SU – 2002/6**

**EZRA LEHMAN MEMORIAL LIBRARY**  
**ADDITION FEASIBILITY STUDY**

**DESCRIPTION OF SELECTED OPTION AND PROGRAM**

The option selected by the University located a bulk of the new program items in the addition, with a few program changes occurring in the existing library. The three story addition will be located on the north side of the library with its main entrance on the ground floor. An atrium space will be located in the center of the new addition allowing natural light into the middle of the building creating a welcoming ground floor entry that can be used for displaying artwork and other functions. The exterior façade of the addition, in an effort to respond to the language of existing, will contain masonry and pre-cast components. The curved façade on the north addition, and the new curved south façade on the existing library, will both begin to respond to adjacent buildings that surround library.

The selected program includes new archive space, break out / display area, a café, and a new entrance on the ground floor, lecture rooms and group study on the first floor and a Writing Center on the second floor. Program changes in the existing library include a group study space on the ground floor, twenty four hour study and a vending area on the first floor. The new program incorporates the existing computer classroom into the new addition and relocates the Pennsylvania Collection and Rare Books to the new archive space, allowing Academic Success, Academic Program Services, and the Learning Assistance Center to move from other areas on campus and occupy the reclaimed space on the existing second floor.

The new program will be organized as follows:

Ground Floor:

Government Archive  
Periodicals  
Microfilm  
Multi-Media Training Office  
Geographical Info System  
Collection Management  
Group Study  
Staff Lounge  
Toilet Rooms  
Mechanical Space  
Receiving  
Support / Circulation Space

Archives  
Hallway  
Café  
Support Space

First Floor:

General Stacks  
Reference  
Computer Stations  
Dean's Office  
Text Books, CD's & Videos  
Inter-Library Loan  
Circulation Desk  
Vestibule  
24 Hour Study / Vending  
Office Space  
Toilet Rooms  
Support Space

Lecture Rooms  
Group Study  
Support Space  
Hallway

Second Floor:

General Stacks  
Reading/Study Space  
Academic Success  
Academic Program  
Services/Learning  
Assistance Center  
Toilet Rooms  
Office Space  
Computer Storage  
A / V Storage  
Private Study  
Support Space

Writing Center  
Hallway  
Support Space  
Outdoor Reading Area

EZRA LEHMAN MEMORIAL LIBRARY  
ADDITION FEASIBILITY STUDY

Program by SSHE Space Guidelines

Program Spaces	Sqaure Feet
<b>Category 100: CLASSROOM</b>	
<i>FIRST FLOOR</i>	
Lecture Room (addition)	2,285
<b>Category 100:</b>	<b>2,285</b>
<b>Category 200: TEACHING LABS</b>	
<i>FIRST FLOOR</i>	
Teaching Lab (addition)	2,285
<i>SECOND FLOOR</i>	
Academic Success	1,900
Learning Assistance Center	932
Writing Center	7,150
<b>Category 200</b>	<b>12,267</b>
<b>Category 300: OFFICE SPACES</b>	
<i>GROUND FLOOR</i>	
Multi-Media Training Office	233
<i>FIRST FLOOR</i>	
Dean's Office	606
Office Space	586
<i>SECOND FLOOR</i>	
Academic Program Services	932
Office Space	190
<b>Category 300</b>	<b>2,547</b>
<b>Category 400: STUDY SPACES</b>	
<i>GROUND FLOOR</i>	
Government Archives	7,290
Periodicals	6,200
Microfilm	493
Geographical Info System	233
Collection Management Area	1,215
Group Study	1,120
Staff Lounge	1,325
Receiving	2,360
Archives (addition)	6,830

Program Spaces	Square Feet
<b>Category 400 continued</b>	
<i>FIRST FLOOR</i>	
General Stacks	6,845
Reference	6,970
Computer Stations	1,018
Text Books, CD's & Videos	2,250
Inter-Library Loan	810
Circulation Desk	1,320
24 Hour Study / Vending	1,350
Study Space (addition)	2,600
<i>SECOND FLOOR</i>	
General Stack	9,321
Reading / Study Space	6,062
Private Study	90
<b>Category 400:</b>	<b>65,702</b>
<b>Non-Category Spaces:</b>	
<i>GROUND FLOOR</i>	
Support / Circulation Space	4,166
Corridor (addition)	3,200
Support Space (addition)	341
Toilets	936
Mechanical Space	1,429
<i>FIRST FLOOR</i>	
Support Space	2,156
Toilets	560
Vestibule	683
Corridor (addition)	1,800
Support Space (addition)	479
<i>SECOND FLOOR</i>	
Toilet Rooms	811
Computer Storage	45
A / V Storage	45
Support Space	1,912
Corridor (addition)	1,855
Outdoor Reading Area (addition)	1,046
Support Space (addition)	468
Café (addition)	95
<b>Non-Category</b>	<b>22,027</b>

Total Building Square Feet	<b>104,828</b>
Building Assignable Square Feet	<b>82,801</b>

EZRA LEHMAN MEMORIAL LIBRARY  
ADDITION FEASIBILITY STUDY

Program by Floor

Ground Floor	Square Feet
<i>Existing Building</i>	
1. Government Archives	7,290
2. Periodicals	6,200
3. Microfilm	493
4. Multi-Media Training Office	233
5. Geographical Info System	233
6. Collection Management Area	1,215
7. Group Study	1,120
8. Staff Lounge	1,325
9. Toilet Rooms	936
10. Mechanical Space	1,429
11. Receiving	2,360
12. Support/Circulation Space (stairs, shafts, corridors, etc.)	4,166
Sub-total:	27,000
<i>Addition</i>	
1. Archives	6,830
2. Corridor	3,200
3. Café	95
4. Support Space (stairs, shafts, etc.)	341
Sub-total:	10,466
First Floor Total:	<b>37,466</b>

Second Floor	Square Feet
<i>Existing Building</i>	
1. General Stack	9,321
2. Reading/Study Space	6,062
3. Academic Success	1,900
4. Academic Program Sevices/ Learning Assistance Center	1,864
5. Toilet Rooms	811
6. Office Space	190
7. Computer Storage	45
8. A/V Storage	45
9. Private Study	90
10. Support Space (stairs shafts, etc.)	1,912
Sub-total:	22,240
<i>Addition</i>	
1. Writing Center	7,150
2. Corridor	1,855
3. Outdoor Reading Area	1,046
4. Support Space (stairs, shafts, etc.)	468
Sub-total:	10,519
Third Floor Total:	<b>32,759</b>

First Floor	Square Feet
<i>Existing Building</i>	
1. General Stacks	6,845
2. Reference	6,970
3. Computer Stations	1,018
4. Dean's Office	606
5. Text Books, CD's & Videos	2,250
6. Inter-Library Loan	810
7. Circulation Desk	1,320
8. Vestibule	683
9. 24 Hour Study / Vending	1,350
10. Office Space	586
11. Toilet Rooms	560
12. Support Space (stairs, shafts, corridors, etc.)	2,156
Sub-total:	25,154
<i>Addition</i>	
1. Lecture Room	2,285
2. Teaching Lab	2,285
2. Study (2 @ 25 capacity)	2,600
3. Corridor	1,800
4. Support Space (stairs, shafts, etc.)	479
Sub-total:	9,449
Second Floor Total:	<b>34,603</b>

Existing Building Sqaure Feet	74,394
Addition Sqaure Feet	30,434
<b>Total Project Square Feet</b>	<b>104,828</b>

## Ezra Lehman Memorial Library

### Addition Feasibility Study

#### Architectural Building Review and Report

The Ezra Lehman Memorial Library is centrally located on the Shippensburg University campus sitting on the south end of the main plaza. The original library was completed approximately in 1967. A few minor alterations have occurred since 1967 however the original building and layout is essentially unchanged. The building consists of three floors (ground, first, and second floors) with the main entrance located on the south side of the first floor.

Ground Floor consists of:

- 27,000 gross square feet
- Periodical Space
- Government Documents
- Learning Assistance Center
- Receiving and Cataloging
- Mechanical and Electrical Building Support Space

First Floor consists of:

- 25,140 gross square feet
- Main Entrance into the library
- Circulation Desk and office space
- Dean's Office and Support space
- General Stacks
- Computer Stations
- Reference space
- Reading Room
- Text Books, CD's, and Video space
- Inter-library loan space

Second Floor consists of:

- 22,240 gross square feet
- Stack space
- Reading space / Quiet study
- Pennsylvania Collections
- Rare Books
- Computer Classroom





## Ezra Lehman Memorial Library

### Addition Feasibility Study

#### A. Existing Exterior Envelope consists of the following:

1. Precast and brick façade with concrete masonry back-up
2. Aluminum windows / curtain wall with single pane clear and spandrel glazing.
3. Rubber roof

#### Exterior Envelope Survey:

1. Overall the exterior brick and precast façade is in good condition; however, there are cracks within the brick on the north and west elevations that will need to be addressed once the renovation work commences.
2. Water damage appears to have occurred along the precast on the south façade and should be further reviewed and repaired.
3. The existing glazing is 1/4" single pane glass. This should be replaced with low-e insulated glazing to reduce the loss/gain of the conditioned inside air. The insulated glass will likely help to reduce the amount of energy required to condition the library. The new glazing will require an entire new window framing system.
4. The letter from Carlisle Syntec Incorporated, dated May 21, 1998, states that the roof does not meet the minimum requirements for an extension of the warranty. Thus a new roof will be required in the future and should be incorporated into the alterations of the library.

#### B. Existing Interior Architectural Conditions consists of the following:

1. The majority of the floor finishes consists of carpeting with VAT at the entry and building support spaces. The toilet rooms have ceramic tile floors.
2. Wall finishes: wood paneling, painted gypsum wall board and painted concrete masonry units.
3. Ceiling finishes: the majority of the ceiling finishes are 12"x12" acoustical tile ceiling.
4. Two exit stairs
5. One communicating stair.
6. Toilet rooms on each floor.
7. Shelving for periodicals, stacks and references.
8. Open table and private cubicles.



## Ezra Lehman Memorial Library

### Addition Feasibility Study

#### Interior Conditions Survey

##### Building Finishes:

1. The floor finishes are dated and appear to have exceeded their life expectancy and should be replaced. The ceramic tile in the toilet rooms is worn and should be replaced.
2. Wall finishes: Much of the walls are concrete masonry units and are in good condition but do require painting. The wood paneling is dated and should be replaced during the alterations.
3. Ceiling finishes: the 12"x12" acoustical tile ceiling appears to be the original ceiling finish. This acoustical tile ceiling is dated and difficult to repair when removed for continuous maintenance.
4. Many of these existing interior finishes appear to be asbestos and will need to be abated.



##### Elevator:

1. The existing elevator is small and presents continuous maintenance issues. A replacement elevator should be considered as part of the building alterations.

#### B. Existing Building Code Review

1. Current code requires the building to be fully sprinklered.
2. The existing first floor entry vestibule does not meet code. A minimum of 7'-0" is required between each set of doors. The door designated for handicap accessibility does not meet current code.
3. The interior communicating stair can not be used as an emergency egress stair. The handrail and guardrail on this stair is not code compliant and will need to be replaced. The ceramic tile treads may not provide adequate slip resistance. A slip resistant test should be done if it is desired to keep the tile.
4. A smoke control system is required at the communication stair.
5. The toilet rooms do not meet the required quantity of fixtures and are not handicap accessible.
6. Perimeter fire safing is required where the floor meets the exterior wall.
7. The aisles between stacks are not wide enough to accommodate a wheel chair. Aisles are to be a minimum of 3'-0" wide.

## **Ezra Lehman Memorial Library**

### **Addition Feasibility Study**

8. The circulation desk is not handicap accessible.
9. The elevator is not handicap accessible. A new elevator in the addition can resolve this issue.
10. One hour ratings are required for all storage rooms over 100 square feet.
11. Emergency lighting and fire alarm system will need to meet current code.
12. If the addition occurs before the alterations a two hour rated separation is required between the existing library and the new addition.

## BUILDING CODE REQUIREMENTS

APPLICABLE BUILDING CODE – BOCA 1999, *INTERNATIONAL BUILDING CODE 2000*

The International Building Code requirements are in *italics*.

USE GROUP	(A-3) ASSEMBLY			
CONSTRUCTION TYPE	2B/IIIB, NON-COMBUSTIBLE, PROTECTED FULLY SPRINKLERED			
HEIGHT AND BUILDING AREA LIMITATIONS	4 STORIES, 60'; 3 STORIES, 75'		35,625 SF/FLOOR	
FLOOR AREA & OCCUPANCY	PROPOSED FLOOR AREAS (OCCUPIABLE GROSS SF)	PROPOSED OCCUPANT LOAD	OCCUPANT LOAD CRITERIA	
Reading Rooms: 50 sf net				
Stacks: 100 sf gross				
	5,560 GSF	55	100 GSF/OCCUPANT	
GROUND FLOOR	30,351 NSF	607	50 NSF/OCCUPANT	
	6,700 GSF	67	100 GSF/OCCUPANT	
1 <sup>ST</sup> FLOOR	27,365 NSF	547	50 NSF/OCCUPANT	
	6,700 GSF	67	100 GSF/OCCUPANT	
2 <sup>ND</sup> FLOOR	<u>25,521 NSF</u>	<u>510</u>	50 NSF/OCCUPANT	
TOTAL		1,853		
FIRE RESISTIVE REQUIREMENTS	ELEMENT	RATING	ELEMENT	RATING
BOCA	EXTERIOR LOADBEARING WALLS	1 HOUR	FIRE PARTITIONS:	
	EXTERIOR NON-LOADBEARING WALLS	0 HOUR	EXIT ACCESS CORRIDORS	0 HOUR
	FIRE WALLS & PARTY WALLS	2 HOUR	OTHER NONLOADING PARTITION	0 HOUR
	FIRE ENCLOSURE OF EXITS	2 HOUR	INTERIOR WALLS OR COLUMNS SUPPORTING MORE THAN 1 FLOOR	1 HOUR
	SHAFTS	2 HOUR	INTERIOR COLUMNS SUPPORTING 1 FLOOR OR ROOF ONLY	1 HOUR
	MIXED USE SEPARATIONS	2 HOUR	STRUCTURAL MEMBERS SUPPORTING WALL	1 HOUR
	OTHER SEPARATIONS	1 HOUR	FLOOR CONSTRUCTION INCLUDING BEAMS	1 HOUR
	SMOKE BARRIERS	1 HOUR	ROOF CONSTRUCTION 15' OR LESS IN HEIGHT	1 HOUR
IBC	EXTERIOR LOADBEARING WALLS	0 HOUR	ROOF CONSTRUCTION 15' TO 20' IN HEIGHT	0 HOUR
	EXTERIOR NON-LOADBEARING WALLS	0-2 HOUR	ROOF CONSTRUCTION OVER 20' IN HEIGHT	0 HOUR
	FIRE WALLS & PARTY WALLS		FIRE PARTITIONS:	
	FIRE ENCLOSURE OF EXITS	2 HOUR	EXIT ACCESS CORRIDORS	0 HOUR
	SHAFTS	2 HOUR	OTHER NONLOADING PARTITION	0-2 HOUR
	MIXED USE SEPARATIONS	2 HOUR	INTERIOR WALLS OR COLUMNS SUPPORTING MORE THAN 1 FLOOR	0 HOUR
			INTERIOR COLUMNS SUPPORTING 1 FLOOR OR ROOF ONLY	0 HOUR
			STRUCTURAL MEMBERS SUPPORTING WALL	0 HOUR

Shippensburg University  
 Library  
 Burt Hill Project #02938.00

	<i>OTHER SEPARATIONS</i>	1 HOUR	<i>FLOOR CONSTRUCTION INCLUDING BEAMS</i>	0 HOUR
	<i>SMOKE BARRIERS</i>	1 HOUR	<i>ROOF CONSTRUCTION 15' OR LESS IN HEIGHT</i>	0 HOUR
			<i>ROOF CONSTRUCTION 15' TO 20' IN HEIGHT</i>	0 HOUR
			<i>ROOF CONSTRUCTION OVER 20' IN HEIGHT</i>	0 HOUR
<b>LENGTH OF EXIT ACCESS TRAVEL</b>	250 FEET			
<b>AREA OF REFUGE</b>	(3) 30" x 48" AREA OF REFUGE REQUIRED PER FLOOR			
<b>EGRESS WIDTH PER OCCUPANT</b>	STAIRS:	0.2 INCHES/ PERSON	MIN. OF 44"	
	DOORS, RAMPS & CORRIDORS	0.15 INCHES/ PERSON	MIN. OF 32" CLEAR DOOR OPENING, MIN. 44" RAMPS & CORRIDORS	
<b>MIN. # OF EXITS</b>	500 OR LESS	2		
	501-1,000	3		
	OVER 1,000	4		
<b>DEAD ENDS CORRIDOR</b>	MAX. DEAD END CORRIDOR IS 20'-0"			
<b>ACCESSIBLE PARKING SPACES</b>	101 TO 150	5 ACC. SPACES	1 ACCESSIBLE VAN PARKING SPACE FOR EVERY 8, OR FRACTION THERE OF	
	151 TO 200	6 ACC. SPACES		
	201 TO 300	7 ACC. SPACES		
<b>CEILING HEIGHTS</b>	MIN. 7'-6" MEASURED FROM THE LOWEST PROJECTION			
	<i>MIN. 7'-6" OCCUPIABLE/ HABITABLE SPACES AND CORRIDORS</i>			
	<i>MIN. 7'-0" BATHROOMS, TOILET ROOMS, KITCHENS, STORAGE ROOMS AND LAUNDRY ROOMS</i>			

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

## **HVAC**

### **I. Cooling System**

#### **A. Chiller**

The existing York chiller, installed in the Mechanical Room on the Ground Floor, is a 325 ton machine that was originally manufactured to operate on R-11 refrigerant. The machine was upgraded approximately 7 years ago to operate on environmentally friendly R-123. The chiller has been well maintained and is in good condition. The present unit has an additional expected life of 10 years.



**Renovation:** The Library has a present chilled water load of 295 tons which leaves a spare capacity of about 30 tons or almost 9%. The spare capacity is capable of handling some additional internal building loads.

**Addition:** The reserve capacity in the chiller is not adequate to handle a building addition of any significant size. There is sufficient space to install a new chiller of greater capacity if the original chiller would be removed. Consideration should be given to tying into the existing chilled water loop on campus which could possibly provide some additional cooling capacity as well provide some measure of standby capacity in the event of building chiller failure.

#### **B. Cooling Tower and Condenser Water Pumps**

The cooling tower and condenser water pumps have been replaced within the past year. The tower and pumps should have a useful life expectancy of 20 years.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

C. Chilled Water Pumps

The chilled water circulation pumps are original to the building although the motors have been replaced. The pump casings and frames are deteriorated and the couplings appear to be original and have outlived their useful life.

**Renovation:** The existing chilled water pumps could possibly handle some small increases in the cooling load, but due to the age of the pumps, replacement is recommended.

**Addition:** New chilled water pumps sized for the total building cooling load with future reserve capacity would be required.



II. Heating System

A. Steam Pressure Reducing Station

High pressure steam enters the Library Mechanical Room from the Campus steam loop where the pressure is reduced and then piped to the hot water heat exchanger. The pressure reducing station has been recently upgraded.

**Renovation and Addition:** The steam pressure reducing station should have sufficient capacity to handle the additional heating and domestic hot water loads represented by any building renovations or addition.

B. Condensate Return Pump

The steam condensate return pump is of the duplex type, having two pumps, and returns steam condensate (water) back to the Campus boiler plant. The pump is original to the building and has outlived its useful life.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

**Renovation:** The existing duplex condensate return pump could possibly handle some additional load but due to the age of the unit, replacement is recommended.

**Addition:** A replacement of the steam condensate return pump sized for the increase load will need to take place when an addition is constructed.

C. Hot Water Heat Exchanger

Steam is used to generate hot water for heating the building. Although the heat exchanger appears to have adequate capacity to handle additional heating loads represented by any renovation or building addition, the heat exchanger is nearly 40 years old and is original to the building.



**Renovation:** The existing heat exchanger has an undetermined amount of scale build-up and has lost efficiency as well as capacity. There is however, some additional reserve to handle some building modifications. Replacement should be considered within the next five years.

**Addition:** The hot water generator should be replaced to handle the additional loads and to improve efficiency.

D. High Efficiency Gas Boiler

A high efficiency gas boiler has been installed to provide hot water to the building for heating when steam is not available from the Campus steam distribution loop. The boiler is new and has an estimated useful life of about 10 years.

**Renovation and Addition:** The boiler has sufficient capacity to handle additional heating loads represented by any renovations or additions. It should be noted that the boiler can only handle heating loads during mild weather.



**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

E. Hot Water Circulating Pumps

The hot water circulation pumps are original to the building although the motors have been replaced. The pump casing and frame is deteriorated and the couplings appear to be original. The pumps have outlived their useful life.

**Renovation:** The existing pumps could possibly handle some additional load but due to the age of the unit, replacement is recommended.

**Addition:** New hot water circulating pumps sized for the total building heating load with future reserve capacity would be required.



III. Airside System

A. Air Handling Units

There are (4) McQuay air handling units that are only about 5 years old. These units have chilled water coils, economizer controls, and humidifiers. The humidifiers are only partially effective since the dew point of unheated air is so low and there is a limited amount a humidity that can be introduced into the air. The air handling units utilize a constant volume design which delivers a predetermined amount of air continuously. During the course of the day when cooling and heating loads drop below their peak, unnecessary cooling and heating results in wasted energy.

**Renovation:** Existing air handling unit's #AHU-3 and #AHU-4 can be adjusted to provide an additional aggregate airflow of 2500 CFM to handle internal building modifications.

**Addition:** There is insufficient reserve capacity in the air handling units to accommodate a new building addition.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

**B. Ductwork**

The ductwork is original to the building and the internal acoustical lining is beginning to break down. Additionally the ductwork has accumulated dirt on its internal surfaces and needs to be cleaned. Since the ductwork is sized to handle only zones presently served, it is not feasible to consider the ductwork serving any other spaces.



**Renovation:** The ductwork has been sized to minimize noise and to provide the proper airflow. Minor building modifications could be handled by the existing ductwork although thorough cleaning and relining would be warranted.

**Addition:** Due to the limited reserve capacity of the air handling units and the noise considerations of the ductwork, no consideration can be made to use the existing ductwork to serve an addition.

**C. Supply Air Plenum**

Supply air ductwork extends from the air handling units down in chases to the particular zones and terminates above the ceilings just outside of the chase. The ceiling plenum serves as a supply air duct for the zone. Air is delivered to the space through narrow vertical slots cut into the ceiling tiles. The system provides a uniform distribution of air however there is not means of adjusting the airflow should a particular area experience a build-up of heat and become warm.

**Renovation:** The system should definitely be changed if renovations are made to the space. The supply air plenum and ceiling tiles should be removed and replaced with sheet metal ductwork and ceiling diffusers.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

**Addition:** A supply air plenum is not recommended.

#### D. Reheat Coils

Heating of the spaces is accomplished by hot water reheat coils installed in the zone ductwork prior to the air discharging into the supply air plenum. The design of these coils is poor in that very close fin spacing was used to increase the heating capacity rather than adding an additional row. Consequently, dirt and dust have been trapped between the narrow fin spaces and clogging has occurred, restricting the flow of air.

**Renovation:** The reheat coils probably have adequate reserve capacity to handle small additional heating loads associated with building modifications. However the poor design of the coils warrants replacement when any work is done.

**Addition:** Since new ductwork will be required in the addition, new reheat coils or hot water variable air volume terminal boxes will be used.



#### E. Exhaust Fans

Exhaust fans serving toilet rooms are of the centrifugal roof type and have been operating adequately for quite some time. The fans are original to the building and have outlived their useful life.

**Renovation:** Replacement of these fans should be considered if any building renovation takes place due to their age and limited operational range.

**Addition:** New exhaust fans selected to meet the needs of the areas served will be used in any addition.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

IV. Building Automation System (Automatic Temperature Controls)

A. Workstations

There are several different types of operational workstations in the Library including Honeywell XCEL Plus and DELTA 2000 systems. The communication protocol on the different systems is not all BAC-NET, consequently the systems cannot be linked together effectively.

**Renovation and Addition:** The building automation controls should be upgraded when any renovation or addition is considered.



B. Pneumatic Actuators

The automatic temperature control system utilizes pneumatic valve operators and dampers to control temperature. The operators by design are simple and provide years (often decades) of trouble free service if the moisture is kept out of the air lines. The existing actuators do not have to be replaced unless it is determined that they are damaged or malfunctioning.

**Renovation:** The existing actuators do not have to be replaced unless it is determined that they are damaged or malfunctioning. Modifications to the ductwork requiring additional controls will be provided with new pneumatic controls.

**Addition:** Pneumatic actuators and operators will be employed in all new devices requiring control due to the excellent longevity of these devices.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

## **PLUMBING**

### **I. Domestic Water Service**

#### **A. Cold Water**

There is a 3 inch cold water service line entering the Library Mechanical Room on the Ground Floor.

**Renovation:** The existing domestic water service appears to be adequate for any renovations taking place within the building.

**Addition:** The existing domestic water service appears to have only marginal additional capacity to serve a building addition. It is anticipated that a new service will be required for a new addition.



#### **B. Hot Water**

Steam is used to generate domestic hot water for the building. The heat exchanger is nearly 40 years old and is original to the building. Scale has built up in the shell of the heat exchanger and there has consequently been a loss of efficiency and capacity.

**Renovation:** Despite deterioration, the steam heat exchanger has additional reserve to handle some building modifications. Replacement should be considered within the next five years.

**Addition:** The hot water generator should be replaced to handle the additional loads and to improve efficiency.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

II. Sanitary Sewer

**Renovation:** The existing 4 inch sanitary sewer has sufficient reserve to accommodate any local plumbing modifications. Any plumbing work that is performed on the northern side of the building would require a new sewer lateral.

**Addition:** A new sanitary sewer lateral will be required.

III. Fixtures:

**Renovation:** All existing fixtures are to be replaced.

**ELECTRICAL**

I. Power

A. Primary Service

The existing electrical service is a loop-fed 13,200 volt service into the Electrical Room in the basement of the Library. The power is fed from nine (9) #10 RR conductors from the Maintenance Building. The conductors can carry an electrical load of up to about 2000 kva.

**Renovation and Addition:** Based on statistical electrical data for college libraries, a load of about 10.4 watts per square foot is common. If this load is applied to the Library, a building having a total area of 110,000 square feet would require about 1030 kva of power. This load is significantly less than the power carrying capability of the primary feeders and no upgrade is required.



**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

## B. Secondary Service

The secondary side of the 750 kva transformer provides 277/480 volts that provides power for lighting and the HVAC equipment. The amp draw measured on September 18, 2002 during our visit amp was 420 amps which equates to about 350 kva. Since the weather on that day was cool and it was raining, the chiller would have been minimally loaded. The 325 ton chiller has an operational efficiency of approximately 0.65 kw/ton, which equates to an electrical load of about 211 kva. If we add the chiller load to the load measured at the incoming service, the maximum estimated anticipated load would be 416 kva. The estimated reserve capacity in the electrical service would be about 190 kva.



**Renovation:** There is sufficient reserve in the electrical service transformer to handle modification in the existing building. However, the main distribution panel has no room for expansion which would be required if an additional panel needs to be installed. Most of the panels located throughout the building do have some space to add several circuits if needed for minor renovation work.

**Addition:** The anticipated load associated with a building addition of about 40,000 square feet would be about 400 kva. Since the reserve capacity in the electrical service is only 190 kva, an upgrade to the secondary service would be warranted.

## II. Generator

The generator is located in the Mechanical Room on the Ground Floor of the Library. The machine generates 20 kw of power at 120/208 volts for emergency lights and an exhaust fan in the Mechanical Room. The generator has been recently replaced and has an estimated life expectancy of 20 years.

**Ezra Lehman Memorial Library  
Addition & Alteration Feasibility Study  
Engineering Systems Report**

**Renovation and Addition:** The existing generator has sufficient reserve capacity to handle any additional emergency lighting loads associated with either a renovation or building addition.

### III. Lighting

The lighting used throughout the building is primarily a 1x4 recessed flanged troffer fluorescent fixture utilizing T-12 lamps. The fixtures are energy inefficient, obsolete, and the lenses are discolored and unattractive. The fact that the fixtures are installed in a spline ceiling makes servicing the fixtures nearly impossible unless the ceiling is dropped.



**Renovation:** Since the ceiling will most likely be changed in the event of any renovation work, it is strongly recommended that the lighting fixtures be replaced with high efficiency T-8 type fluorescent lights having electronic ballasts. New fluorescents will allow for additional fixtures with increasing energy use.

**Addition:** All new building construction will utilize new lighting fixtures.

### IV. Fire Alarm

The existing fire alarm system is limited to emergency pull stations at exits and duct mounted smoke detectors in the four (4) air handling units located in the Penthouse.

**Renovation and Addition:** Consideration should be made to install a new addressable fire alarm system if either a renovation or addition is considered.



# DAVID CHOU & ASSOCIATES, INC.

STRUCTURAL ENGINEERS & CONSULTANTS

1710 WALTON ROAD  
SUITE 202  
BLUE BELL, PA 19422

EMAIL: DCA8888@ATXMAIL.COM  
(610) 940-9070  
FAX (610) 940-9075

January 7, 2004

Mr. Eric Farrell,  
Burt Hill Kosar Rittelmann  
1735 Market St., 53<sup>rd</sup>. Floor  
Philadelphia, PA 19103

RE: Ezra Lehman Memorial Library Addition  
Shippensburg University  
Shippensburg, PA

Dear Eric,

The following is a summary of our conceptual design for the proposed addition at the Ezra Lehman Memorial Library.

<b>Building Code:</b>	IBC 2003
<b>Design Loads:</b>	Design live load is 150 psf. for stacking and 100 psf elsewhere. Wind Speed, 3-second gust is 90 mph. Seismic: Input required from a geotechnical engineer.
<b>Existing Structure:</b>	A three-story concrete frame structure was constructed in 1965 with brick veneer and supported on concrete caissons (typical size, three feet diameter shaft with five feet bell). The floor framing system is a concrete waffle two-way slab, 3" thick topping and 8" deep ribs, a total of 11" thick slab. Concrete spandrel beams are typically 16" x 26" with steel shelf angles. Columns are typically, 16" x 16" and floor heights are 12' 8".
<b>Foundation for Addition:</b>	Typically 4'-6" diameter caissons (straight shaft) or 3'-0" diameter shaft with 4'-6" bell.
<b>Proposed Framing Schemes:</b>	Concrete Scheme and Structural Steel Scheme.
<b>Concrete Scheme:</b>	Proposed floor slab is a 9" flat plate with 4.5 pounds per

square foot of mild reinforcement. Exterior spandrel beams are 14" x 24" with steel shelve angles. Interior concrete girders spanning 42 feet are 24" x 42" with 120 pounds per linear foot of mild reinforcing steel . Columns shall be minimum 20"x 20" with 400 pounds per cubic yard of mild reinforcing steel. Concrete compressive strength shall be 4000 psi at 28 days.

**Structural Steel Scheme:**

Structural Steel shall be A36 with A325 bearing type bolts. Floor construction shall be 4-1/2 inch concrete topping on 1-1/2 inches composite metal deck. Typical floor beams shall be W12 x 16 spacing at 6'-0" on centers with 10 - 3/4" diameter studs. The steel girders are W18x35 for 25' span, and W30x 116 for 42' span with 32 studs and 92 studs respectively. Columns are W14x73. All beams are assumed to have Type II moment connections at columns for lateral loads.

**CONCLUDING REMARKS:**

There are a few variations in the above concrete slab framing scheme, such as waffle concrete slab and flat slab (flat plate with drop panel). Then, we also can post-tension slabs and girders and their depths would be shallower accordingly. However, the latter requires a specialty contractor to provide the service. Therefore, it is our opinion that the flat plate with mild reinforcements is probably the most cost effective in the concrete scheme.

Both Concrete and Structural Steel Schemes must be evaluated in their totality with a contractor prior to making the final construction documents. For an example, the structural steel scheme needs to add the cost of fire protection, while the concrete scheme needs cost of a longer construction period. However, by looking at the preliminary sizes, the concrete scheme is more suitable and cost effective for this project.

If you have any questions about our design, please do not hesitate to call us.

Sincerely,

DAVID CHOU & ASSOCIATES, INC.



---

David Chou, Ph.D., P.E.

EZRA LEHMAN MEMORIAL LIBRARY  
ADDITION FEASIBILITY STUDY

PRELIMINARY PROBABLE COSTS

Project Probable Square Foot Costs:

Existing Building Alterations:

• Ground Floor @ \$75/square foot	=	\$2,025,000.00
• First Floor @ \$75/square foot	=	\$1,886,550.00
• Second Floor @ \$75/square foot	=	<u>\$1,668,000.00</u>

Sub total \$5,579,550.00

Addition:

• Foundation: caissons @ \$150/l.f.	=	\$225,000.00
• Site Work: allowance	=	\$300,000.00
• Ground Floor @ \$175/square foot	=	\$1,831,550.00
• First Floor @ \$175/square foot	=	\$1,831,550.00
• Second Floor @ \$175/square foot	=	<u>\$2,018,800.00</u>

Sub total \$5,781,900.00

• South Façade Alterations: allowance		\$300,000.00
• 3 Story glass tower on east side of building: allowance		<u>\$750,000.00</u>

Sub - total: \$12,836,450.00

Contingency (10% of construction costs):	\$1,283,645.00
Design Costs (Fee, permitting, etc., 10% of construction costs):	\$1,283,645.00
Furniture, Fittings and Equipment (15% of construction costs):	<u>\$1,925,468.00</u>

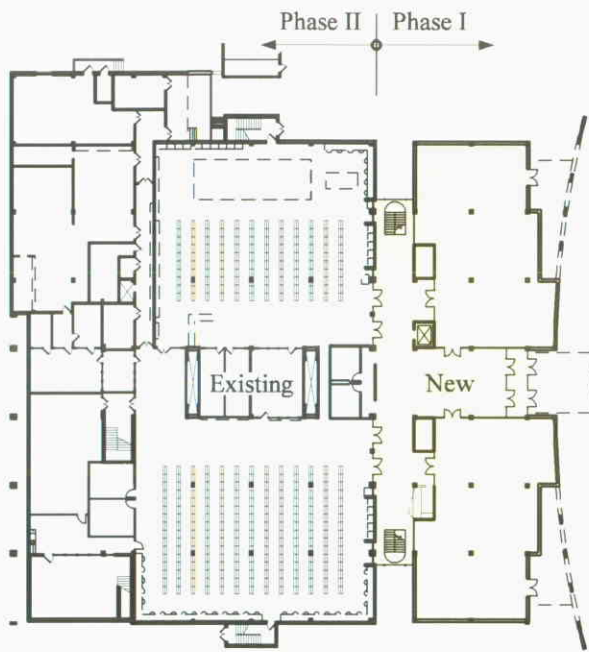
Sub -total: \$4,492,758.00

**Total: \$17,329,210.00\***

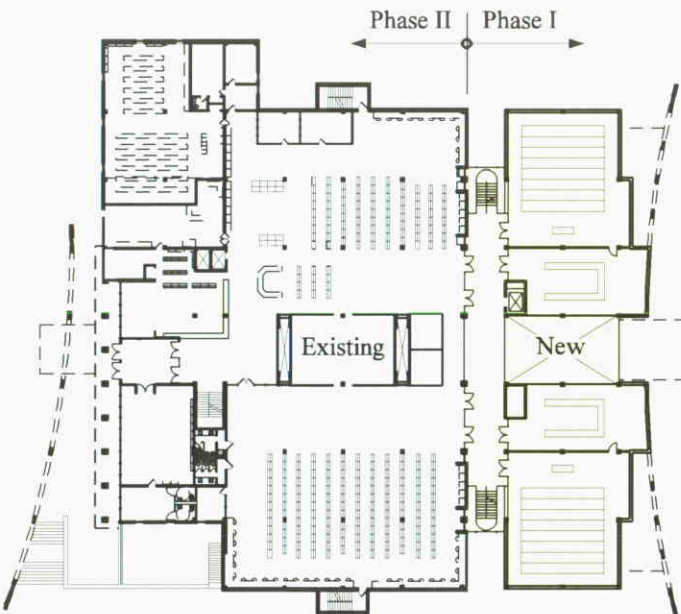
\* 2003 cost numbers

Exclusions:

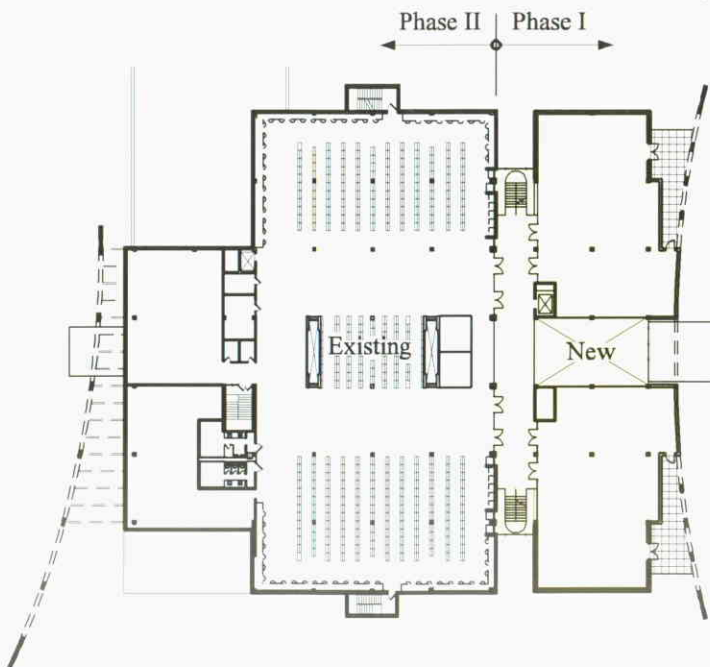
- Escalation not included (should be estimated at approximately 3% per year)



Second Floor - Phasing Plan



First Floor - Phasing Plan



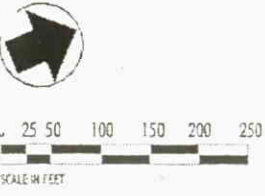
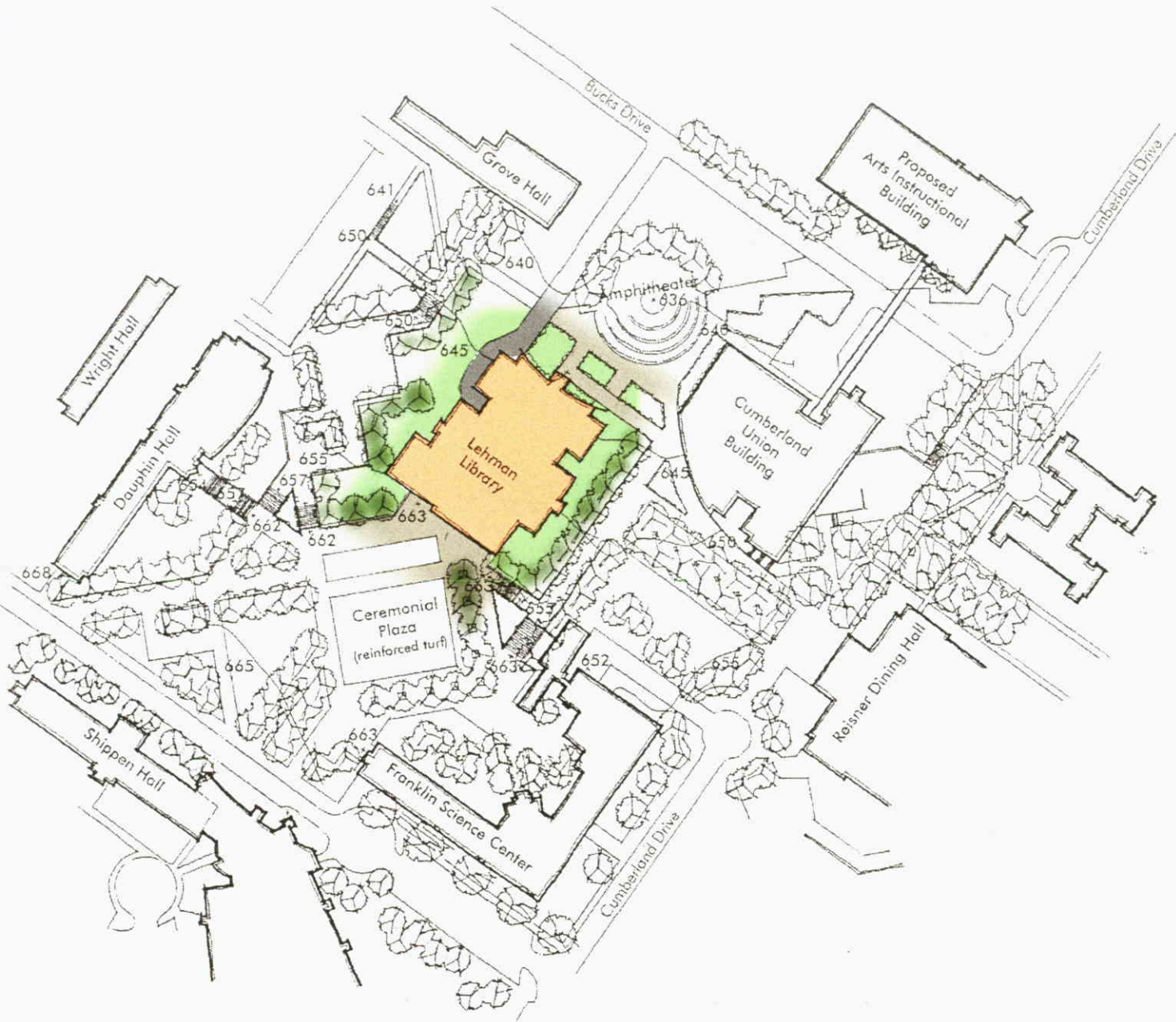
Ground Floor - Phasing Plan

SCALE: 0 10 20 20



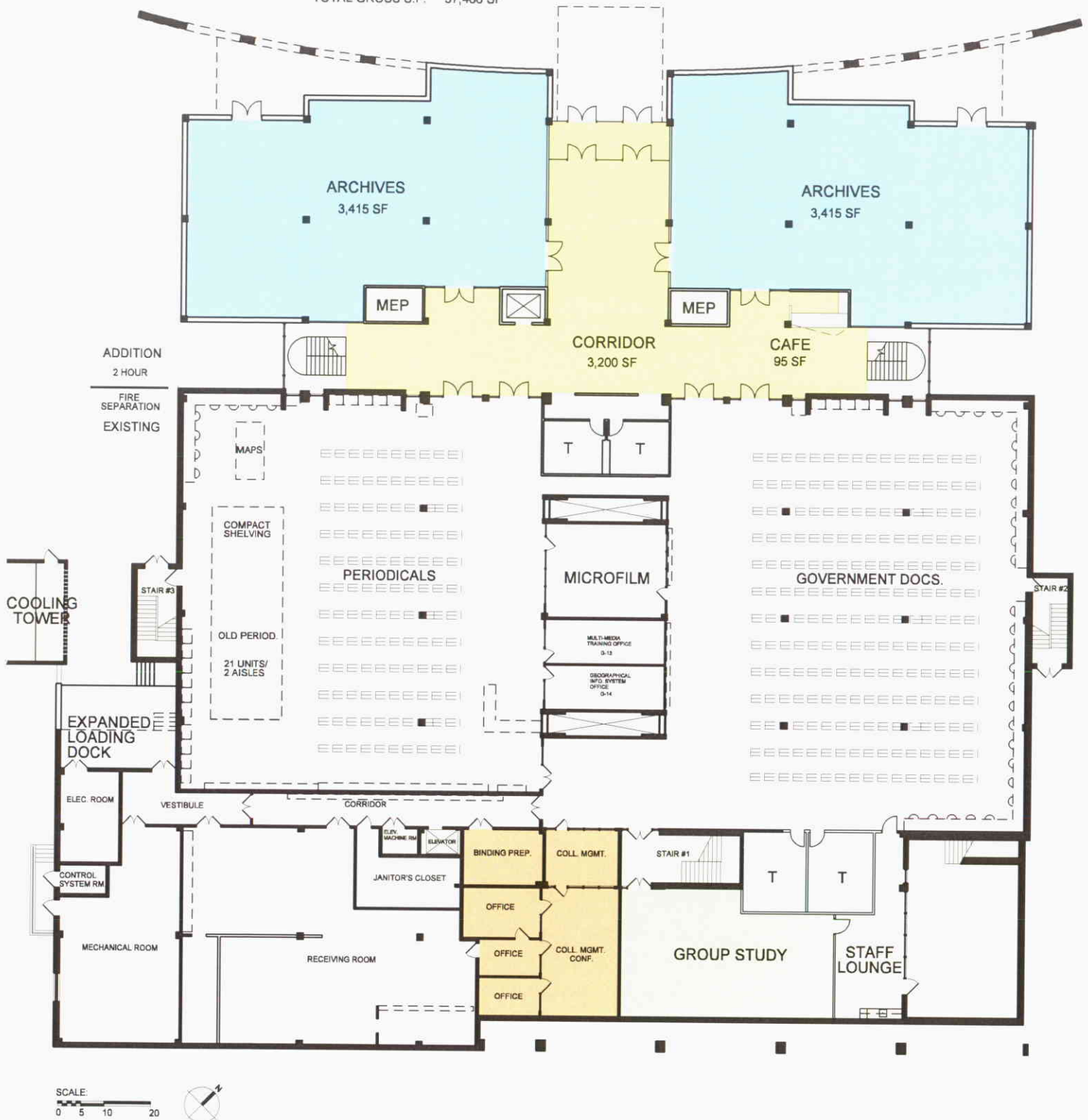
# Conceptual Site Plan (Baker Associates)

January 2004



Shippensburg  
University

NEW ADDITION 10,466 SF  
 EXISTING 27,000 SF  
 TOTAL GROSS S.F. 37,466 SF



## Ezra Lehman Memorial Library

### Conceptual Ground Floor Plan New Addition and Renovation

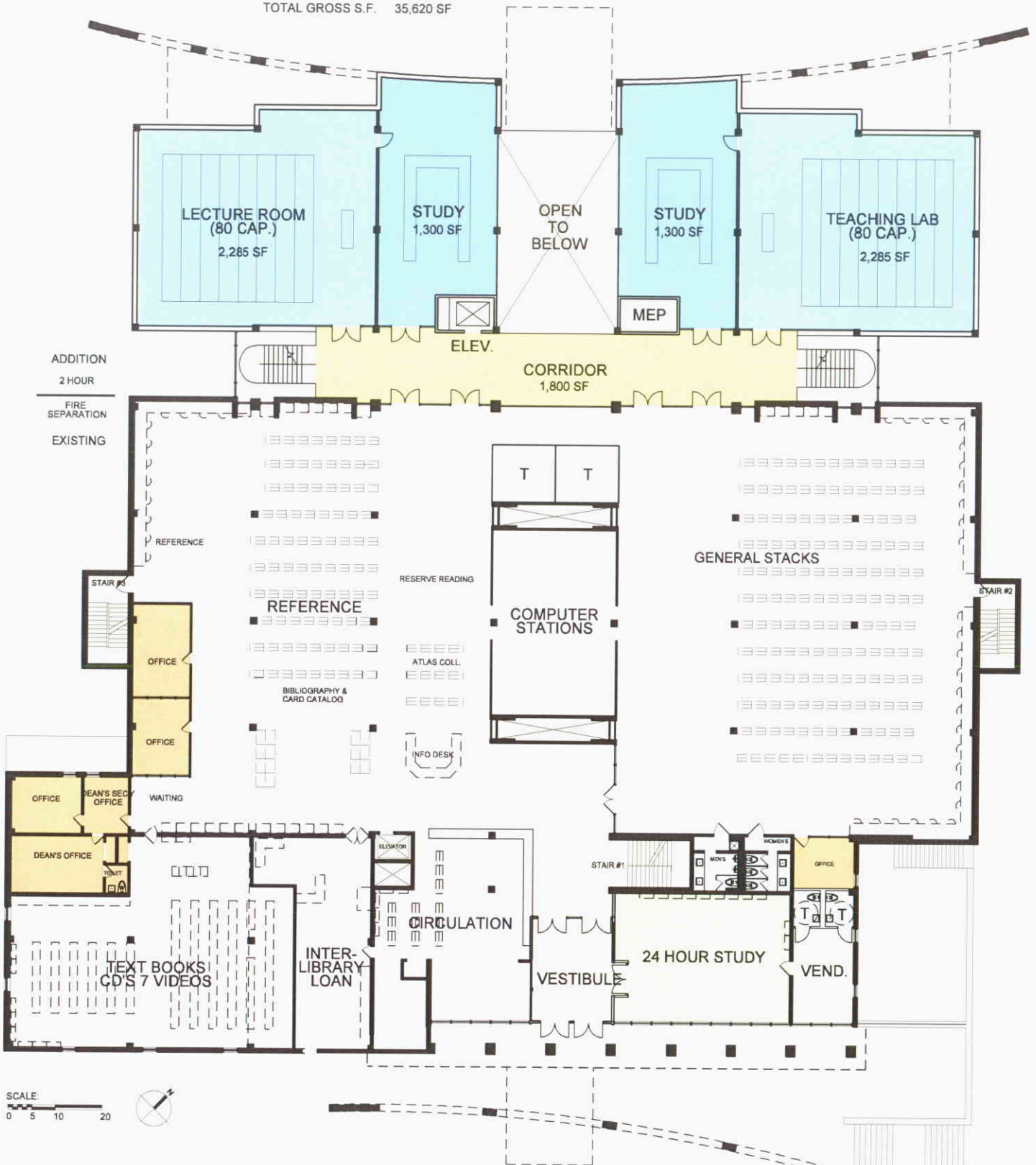


April 2004



Burt Hill

NEW ADDITION 9,449 SF  
 EXISTING 25,154 SF  
 TOTAL GROSS S.F. 35,620 SF



### Ezra Lehman Memorial Library

#### Conceptual First Floor Plan New Addition and Renovation



April 2004



NEW ADDITION 10,519  
 EXISTING 22,240  
 TOTAL GROSS S.F. 33,776 SF



ADDITION  
 2 HOUR  
 FIRE SEPARATION  
 EXISTING



Ezra Lehman Memorial Library

Conceptual Second Floor Plan  
 New Addition and Renovation





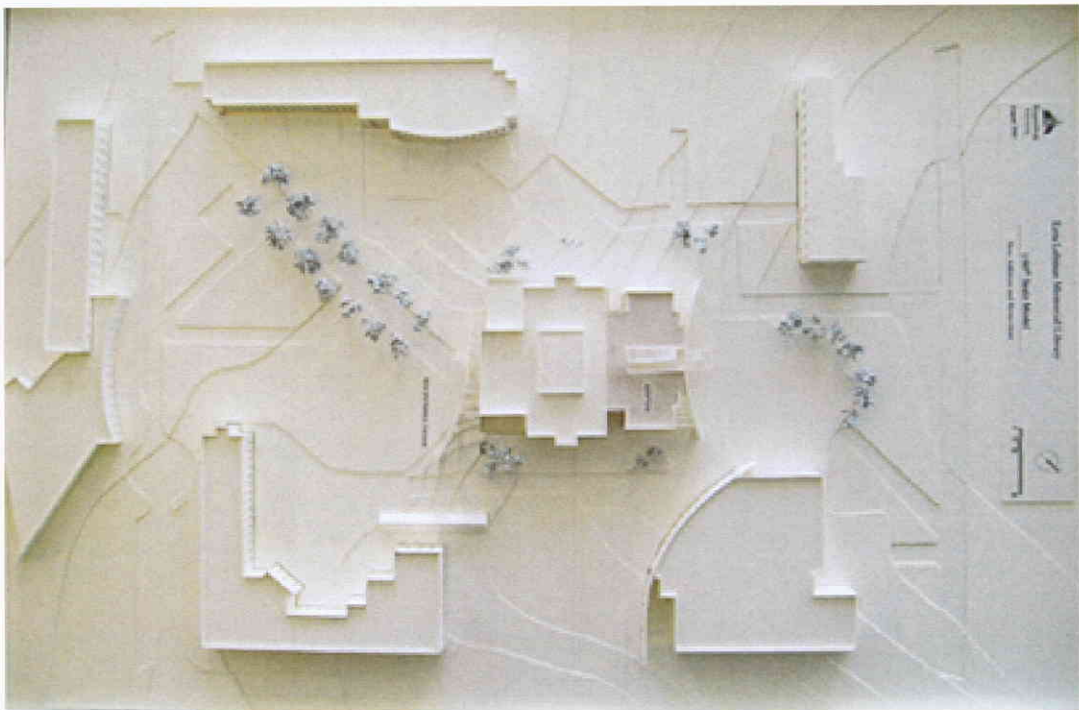
Northeast View of Addition



North Elevation of Addition



New South Facade



Plan View



North Elevation

Ezra Lehman Memorial Library New Addition



South Elevation

Ezra Lehman Memorial Library New Addition

EZRA LEHMAN MEMORIAL LIBRARY  
ADDITION FEASIBILITY STUDY

EVALUATION

Evaluation Criteria:

The project requires an understanding of the new programmatic requirements that are generating the desire and need for the addition, as well as an understanding of how these new programs will impact the existing library, both functionally and programmatically. This will then assist in determining the location of the addition, the programmatic functions housed within it, and the associated impact on the existing library, if any. In an effort to best understand the criteria impacting the addition, interviews were held with key members of the University. These interviews provided a clear understanding of the goals of the new addition, the existing function and programmatic layout of the library, and the long term goals of the University. Finally, consideration was given to how the new addition would impact the University's Campus Master Plan.

Evaluation Summary and Conclusions:

Through meetings and interviews it became clear that the focus of the project will be the addition. A primary intention of the University is to create a Writing Center to provide the student body with an interactive / proactive writing program. It will assist in developing writing skills and inspire the future authors who attend Shippensburg University. The Center will consist of a three story addition that includes archive space, lecture and study space, and an area designated specifically for the Writing Center. The center will also act as an outreach program for the surrounding community where special events and exhibits can be held. In conclusion, the Writing Center's goal is to create a new and creative environment that encourages all aspects of writing.

## Process



- A) November 1, 2002 Submission
- B) November 19, 2003 Submission
- C) February 28, 2003 Submission
- D) August 2003 Submission

# November 1, 2002 Submission



1. **Scheme A Programming**
  - Ground Floor Plan
  - 1<sup>st</sup> Floor Plan
  - 2<sup>nd</sup> Floor Plan
2. **Scheme B**
  - Ground Floor Plan
  - 1<sup>st</sup> Floor Plan
  - 2<sup>nd</sup> Floor Plan
3. **Scheme C**
  - Ground Floor Plan
  - 1<sup>st</sup> Floor Plan
  - 2<sup>nd</sup> Floor Plan
4. **Concept Overview**
5. **Comparative Budgets**

GROUND FLOOR ADDITION: 9,500 SF  
 TOTAL BUILDING: 107,500 SF



## Ground Floor Program Concept 'A'

New Addition without Renovation



## Ezra Lehman Memorial Library



Shippensburg University

November 1, 2002



Burt Hill



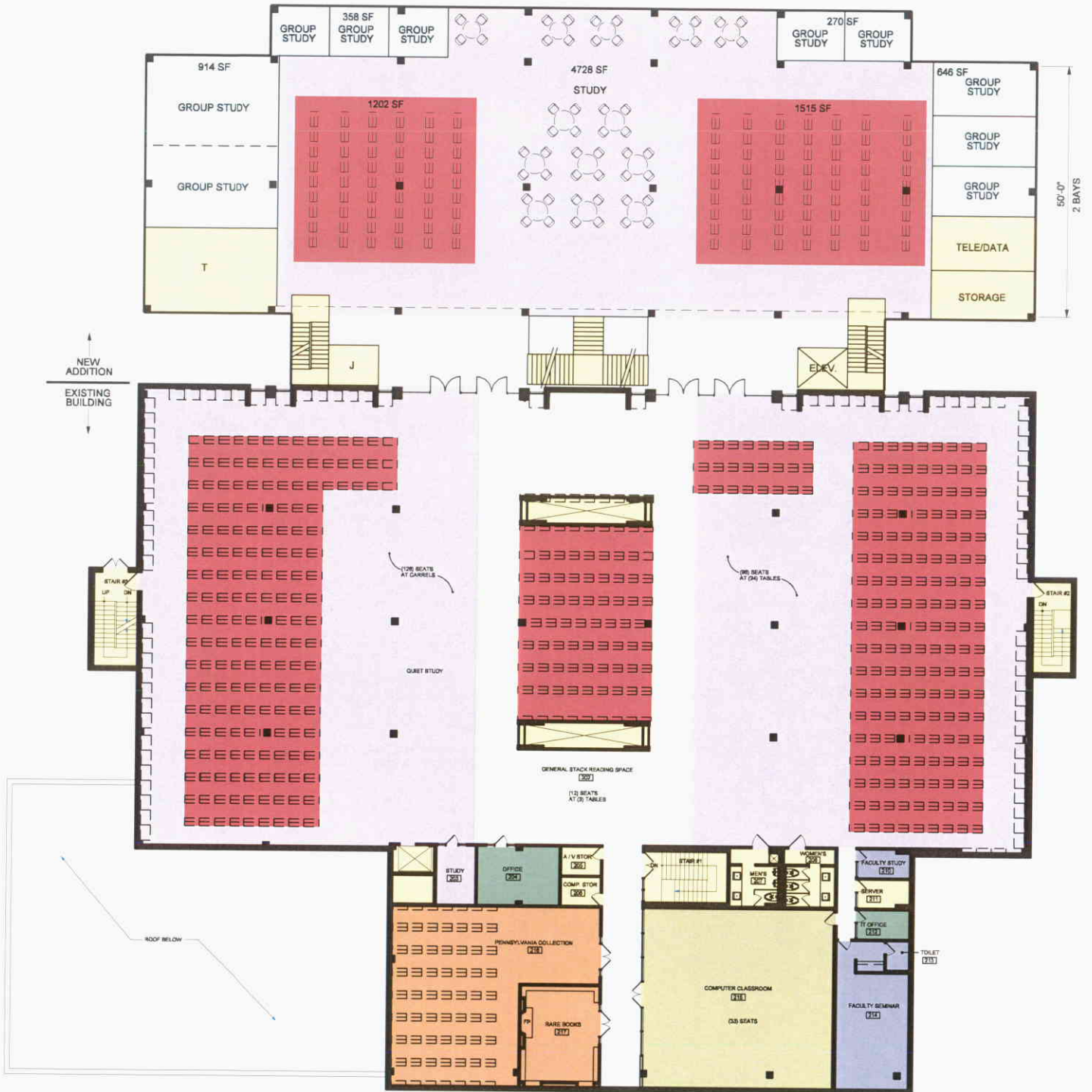
FIRST FLOOR ADDITION: 11,500 SF  
 TOTAL BUILDING: 107,500 SF



**First Floor Program Concept 'A'**  
 New Addition without Renovation



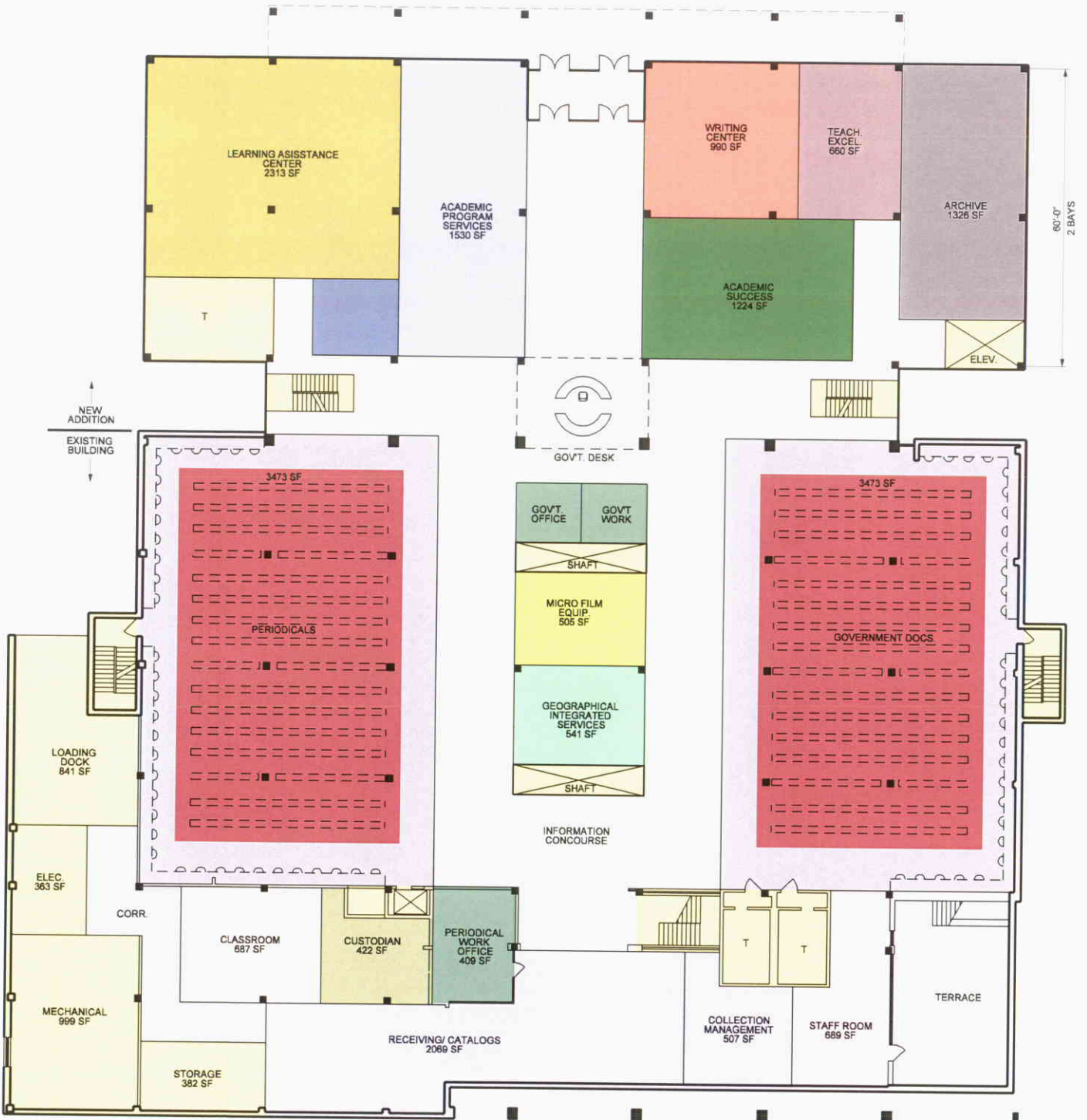
SECOND FLOOR ADDITION: 11,500 SF  
 TOTAL BUILDING: 107,500 SF



## Second Floor Program Concept 'A'

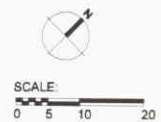
New Addition without Renovation

## Ezra Lehman Memorial Library



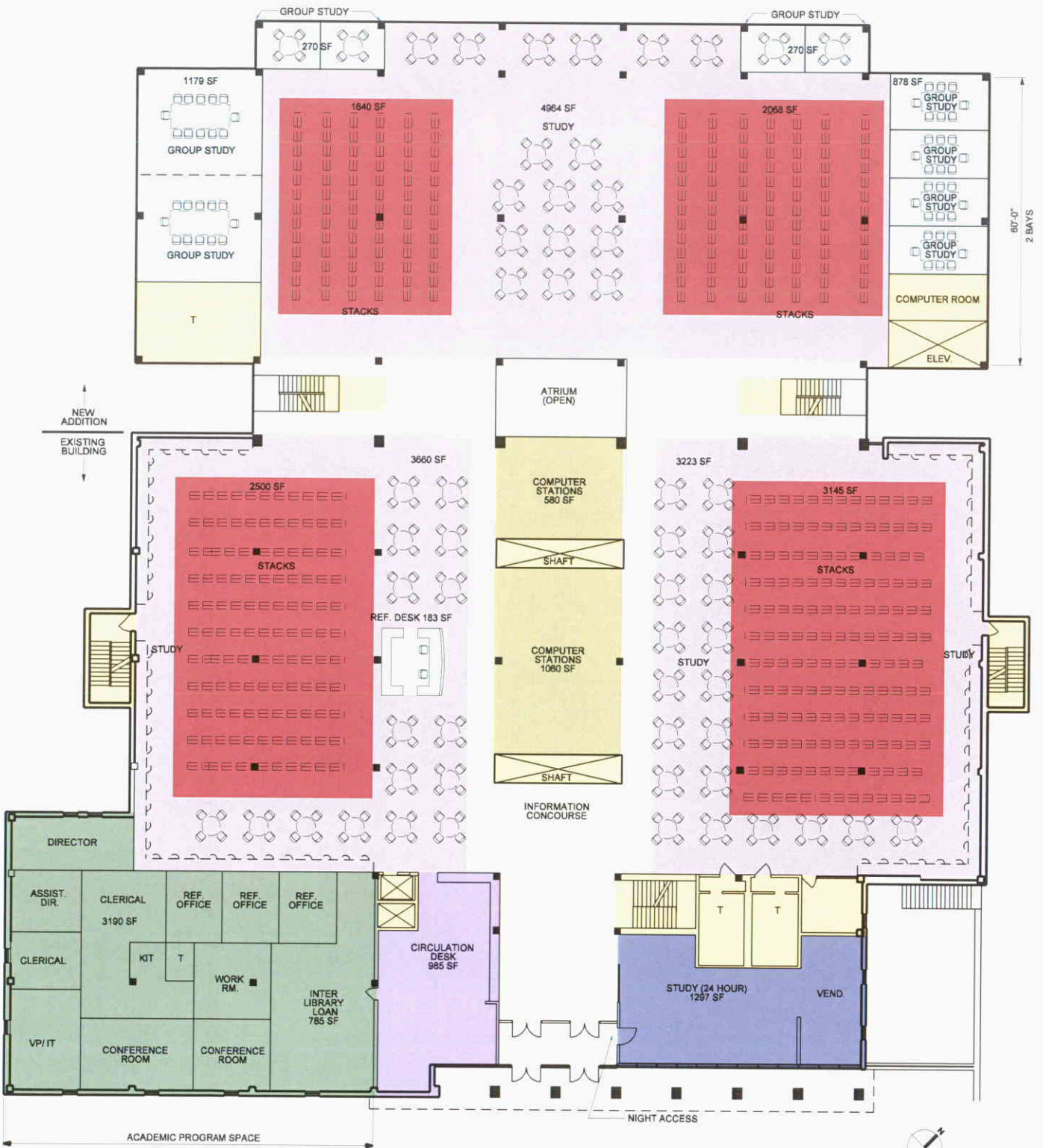
Ground Floor Program Concept 'B'

New Addition with Renovation



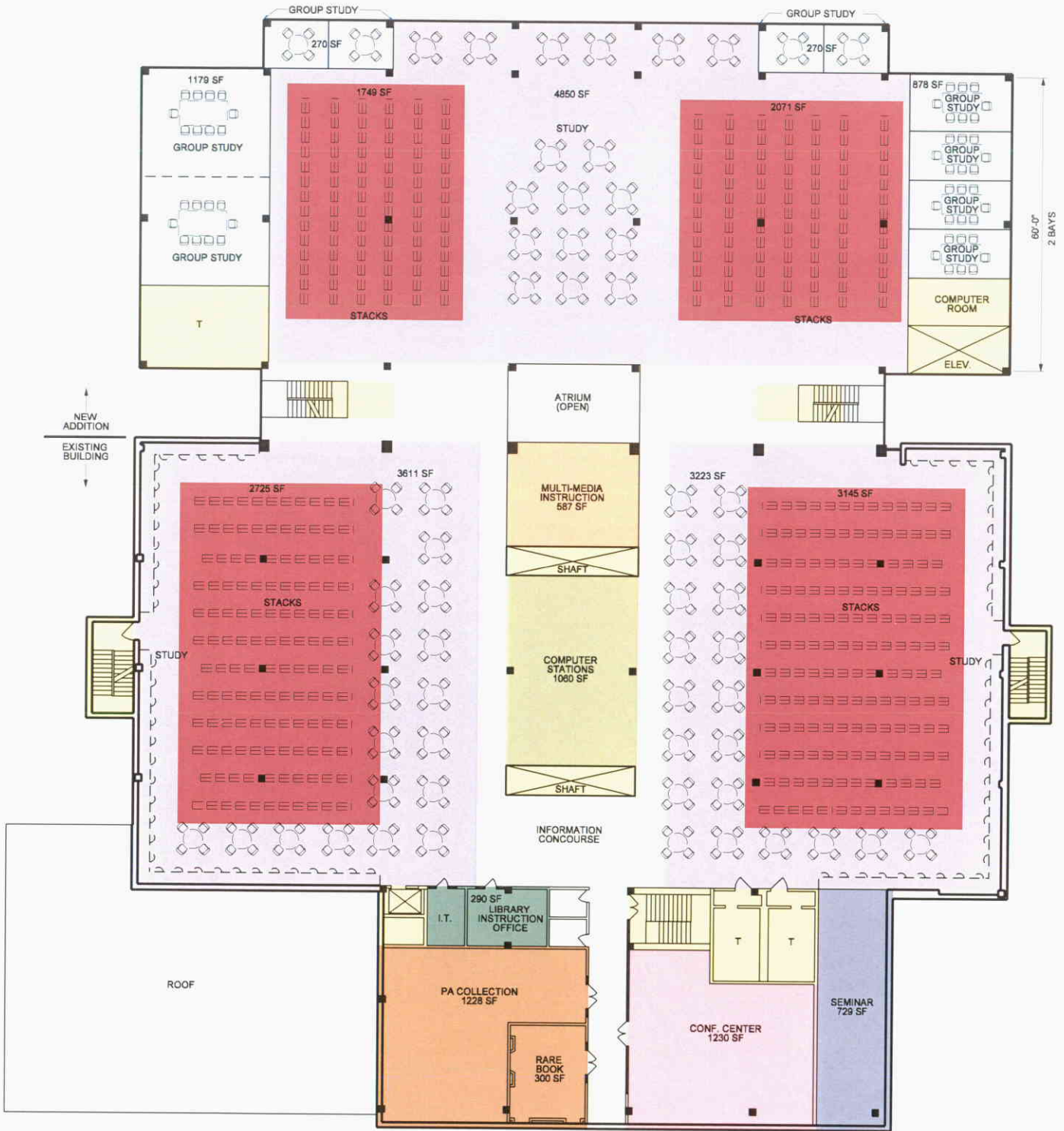
Ezra Lehman Memorial Library

FIRST FLOOR ADDITION: 13,050 SF  
 TOTAL BUILDING: 112,500 SF



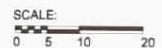
**First Floor Program Concept 'B'**  
 New Addition with Renovation

SECOND FLOOR ADDITION: 13,050 SF  
 TOTAL BUILDING: 112,500 SF



**Second Floor Program Concept 'B'**

New Addition with Renovation



**Ezra Lehman Memorial Library**



November 1, 2002

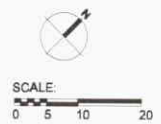


Burt Hill

GROUND FLOOR ADDITION: 14,500 SF (14,432 SF)  
 TOTAL BUILDING: 121,500 SF



Ground Floor Program Concept 'C'  
 New Addition with Renovation



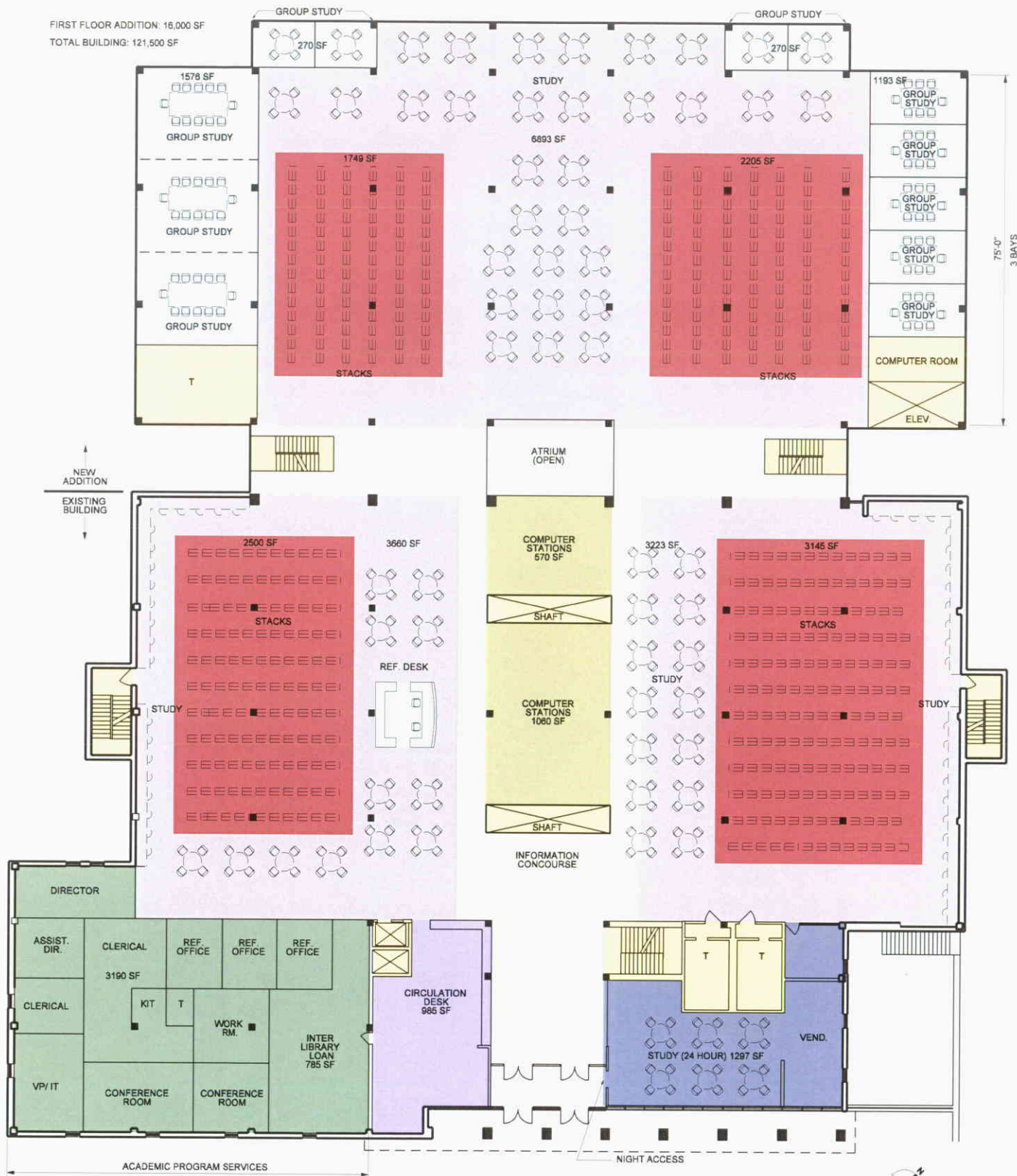
Ezra Lehman Memorial Library



November 1, 2002



FIRST FLOOR ADDITION: 16,000 SF  
 TOTAL BUILDING: 121,500 SF



### First Floor Program Concept 'C'

New Addition with Renovation

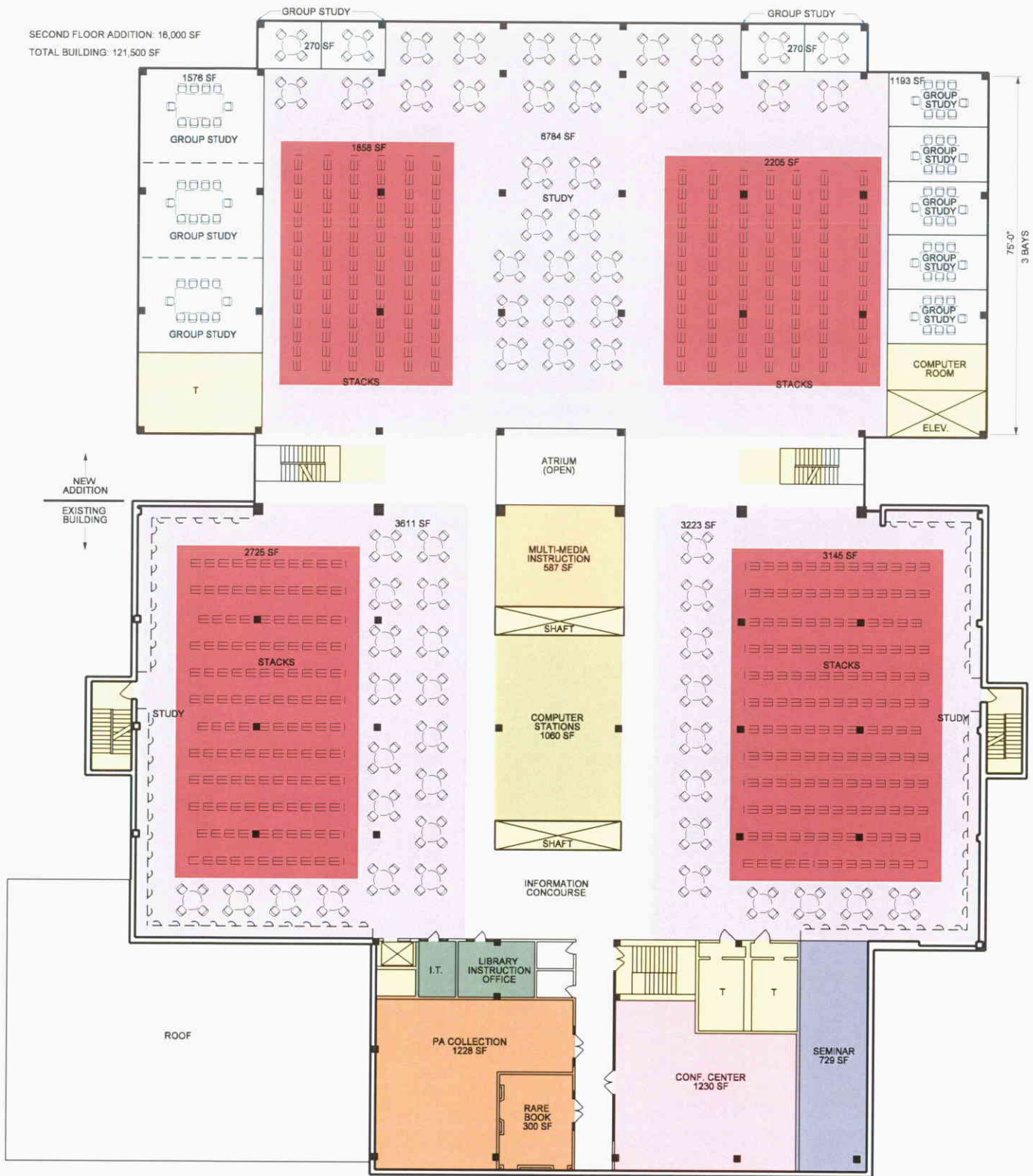


November 1, 2002

## Ezra Lehman Memorial Library

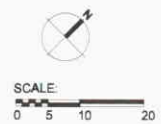


SECOND FLOOR ADDITION: 16,000 SF  
 TOTAL BUILDING: 121,500 SF



### Second Floor Program Concept 'C'

New Addition with Renovation



## Ezra Lehman Memorial Library



October 28, 2002





## CONCEPT OVERVIEW

PRELIMINARY 11/01/02

### PLANNING PRINCIPLES

- Library to be anchor for campus, a focal point of the quardangle
- Image to appropriate and complementary to recent buildings
- Addition façade to present additional front to performance hall
- Interior to integrate and feature technology
- Planning to provide for long term flexibility
- Program to incorporate complementary uses and programs
- Study spaces to be more diverse and include group study rooms

### PLANNING PARAMETERS

- Logical site area for expansion is to the northwest
- Rear façade has been designed for expansion in this direction.
- Expansion up is not practical because of a mechanical penthouse and library staffing
- Interior should be organized along a central spine as the Information Concourse
- Periodicals should move to the ground floor (access to compact shelving)
- Large open study areas should be maintained for flexibility and cost effectiveness
- New related functions should be at addition ground floor for separate access

### CONCEPT A

- Three level addition with 35,500 sf total
- Provides 750 seats, including group study
- Minimal renovation along information concourse (budget requirements)
- Additional renovation may be included in future phase (Concept B or C renovation protion)

### CONCEPT B

- Three level addition with 37,500 sf total
- Provides 750 seats plus group study seating
- Assumes complete renovation
- Includes new façade at existing entry

### CONCEPT C

- Three level addition with 46,500 sf addition
- Provides for expanded program (seating, archives, etc.)
- Assumes complete renovation
- Includes new façade at existing entry

**LEHMAN MEMORIAL LIBRARY**  
**SHIPPENSBURG UNIVERSITY OF PENNSYLVANIA**

**COMPARATIVE BUDGETS**

**PRELIMINARY 11/01/02**

	Basic Program	Full Program	Expanded Program
Program area:	107,500	112,500	121,500
Existing area	<u>75,000</u>	<u>75,000</u>	<u>75,000</u>
Additional area	32,500	37,500	46,500

**BASIC PROGRAM** (\$8 million – Addition without renovation)

New: 32,500 sf @ \$190/sf = \$6,175,000  
 Renovation allowance @ 300,000

Sub total A \$6,475,000

Project costs @ 25% 1,618,750

Sub total B \$8,093,750

20% construction cost escalation – 5 year projection \$1,618,750

TOTAL **\$9,712,500**

**FULL PROGRAM** - Additional Seating (\$18 million)

New: 37,500 sf @ \$190/sf = \$7,125,000  
 Ren: 75,000 @ \$100/sf = 7,500,000  
 South façade  
 renovation: allowance 300,000

Sub total A \$14,925,000

Project costs @ 25% 3,731,250

Sub total B \$18,656,250

20% construction cost escalation – 5 year projection \$3,731,250

TOTAL **\$22,387,500**

**EXPANDED PROGRAM** – additional program (\$20 million)

New: 46,500 sf @ \$190/sf =	\$8,835,000	
Ren: 75,000 sf @ \$100 =	7,500,000	
South façade renovation allowance:	<u>300,000</u>	
Sub total A	\$16,635,000	
Project costs @ 20%	<u>3,327,000</u>	
Sub total B		\$19,962,000
20% construction cost escalation – 5 year projection		<u>3,992,400</u>
TOTAL		<b>\$23,954,400</b>

## November 19, 2002 Submission



1. **Scheme A Programming**
  - Ground Floor Plan
  - 1<sup>st</sup> Floor Plan
  - 2<sup>nd</sup> Floor Plan
2. **Scheme B**
  - Ground Floor Plan
  - 1<sup>st</sup> Floor Plan
  - 2<sup>nd</sup> Floor Plan
3. **Scheme C**
  - Ground Floor Plan
  - 1<sup>st</sup> Floor Plan
  - 2<sup>nd</sup> Floor Plan
4. **Concept Overview**
5. **Comparative Budgets**

GROUND FLOOR ADDITION: 9,500 SF (9,517 SF)  
TOTAL BUILDING: 107,500 SF



### Ground Floor Program Concept 'A'

New Addition without Renovation

### Ezra Lehman Memorial Library



FIRST FLOOR ADDITION: 11,500 SF (10,788 SF)  
 TOTAL BUILDING: 107,500 SF



### First Floor Program Concept 'A'

New Addition without Renovation

SECOND FLOOR ADDITION: 11,500 SF (10,788 SF)  
 TOTAL BUILDING: 107,500 SF



## Second Floor Program Concept 'A'

New Addition without Renovation



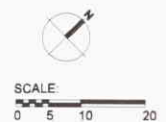
## Ezra Lehman Memorial Library

GROUND FLOOR ADDITION: 11,400 SF (11,470 SF)  
 TOTAL BUILDING: 112,500 SF



### Ground Floor Program Concept 'B'

New Addition with Renovation



## Ezra Lehman Memorial Library



FIRST FLOOR ADDITION: 13,050 SF (12,781 SF)  
 TOTAL BUILDING: 112,500 SF

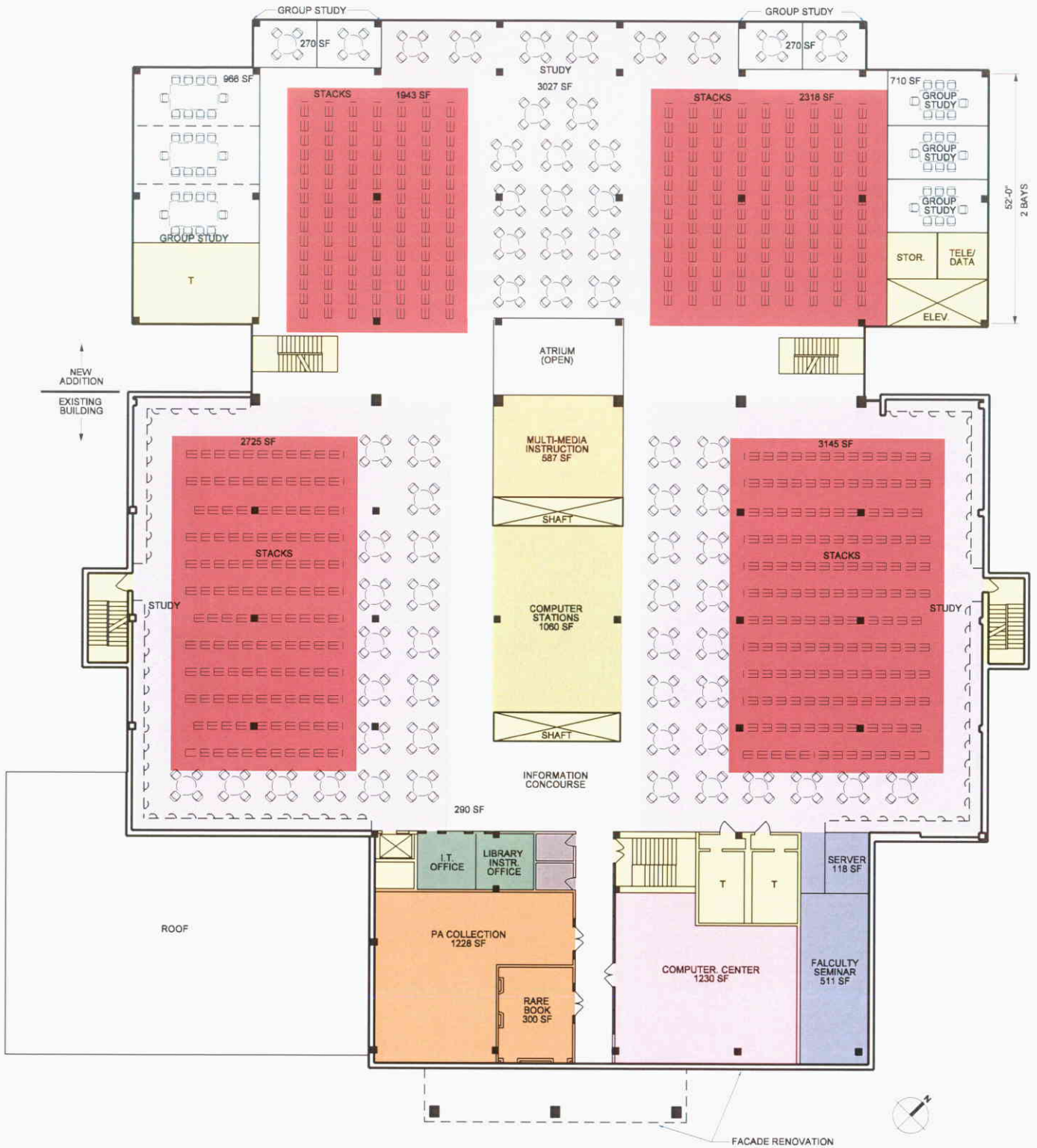


### First Floor Program Concept 'B'

New Addition with Renovation

## Ezra Lehman Memorial Library

SECOND FLOOR ADDITION: 13,050 SF (12,781 SF)  
 TOTAL BUILDING: 112,500 SF



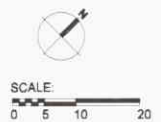
**Second Floor Program Concept 'B'**  
 New Addition with Renovation

Ezra Lehman Memorial Library

GROUND FLOOR ADDITION: 14,500 SF (14,701SF)  
 TOTAL BUILDING: 121,500 SF



Ground Floor Program Concept 'C'  
 New Addition with Renovation



Ezra Lehman Memorial Library

FIRST FLOOR ADDITION: 16,000 SF (16,010 SF)  
 TOTAL BUILDING: 121,500 SF



### First Floor Program Concept 'C'

New Addition with Renovation

## Ezra Lehman Memorial Library



**Second Floor Program Concept 'C'**  
New Addition with Renovation

Ezra Lehman Memorial Library

**EZRA LEHMAN MEMORIAL LIBRARY ADDITION FEASIBILITY STUDY  
SHIPPENSBURG UNIVERSITY**

*Preliminary Conceptual Submission Review - 20 January, 2003*

**Programming Study**

**By Room Use Codes Category Configuration**

Program Spaces	Quantity Desired	Required S.F.		Scheme - A		Scheme - B		Scheme - C	
				Qty.	S.F.	Qty.	S.F.	Qty.	S.F.
<b>Category 200</b>									
<b>LIBRARY</b>									
computer center		1,400	seats 40		1,330		1,330		1,330
library instruction classroom		750	seats 30		701		667		687
multi-purpose seminar room		500	seats 20		450		511		511
multi-media training room			seats 10		522		587		587
					3,003		3,115		3,115
<b>ACADEMIC SUCCESS</b>									
academic success faculty	4	115			T.B.D.		T.B.D.		T.B.D.
academic success clerical		275			T.B.D.		T.B.D.		T.B.D.
academic success grad students	5	80			T.B.D.		T.B.D.		T.B.D.
			1,135		1,054		1,042		1,596
<b>WRITING CENTER - CONCEPT</b>									
seminar/work room		450	seats 15		T.B.D.		T.B.D.		T.B.D.
offices	2	115			T.B.D.		T.B.D.		T.B.D.
manuscript storage		200			T.B.D.		T.B.D.		T.B.D.
toilet/ref. Alcove		100			T.B.D.		T.B.D.		T.B.D.
			980		692		871		1,057
<b>TEACHING &amp; LEARNING CENTER</b>									
resource room w/ shelving		360	seats 12		T.B.D.		T.B.D.		T.B.D.
conf./workshop room		300	seats 10		T.B.D.		T.B.D.		T.B.D.
small conference room		90	seats 3		T.B.D.		T.B.D.		T.B.D.
secure storage		50			T.B.D.		T.B.D.		T.B.D.
computers	2	30			T.B.D.		T.B.D.		T.B.D.
			860		805		740		1,032
<b>LEARNING ASSISTANCE CENTER</b>									
learning assistance center		1,800			1,764		1,258		1,872
					1,764		1,258		1,872
<b>Category 210</b>									
<b>Category 300</b>									
<b>ADMIN/IT</b>									
VP-IT		300					303		303
associate vp/director library		200					210		210
asst. director		125			600		138		138
clerical-vp		115					128		128
clerical-assoc. vp		115					167		167
file/workroom		275					256		256
conference		250	seats 10				359		359
toilet/ref. Alcove		80					110		110
			1,460		600		1,671		1,671
<b>VARIOUS OFFICES</b>									
multi-media training office					238				
library instruction office		115			191		143		143
IT services office		115			61		143		143
					490		286		286
<b>ACADEMIC PROGRAM SERVICES</b>									
dean's office		200			T.B.D.		T.B.D.		T.B.D.
secretary		115			T.B.D.		T.B.D.		T.B.D.
asst. dean		125			T.B.D.		T.B.D.		T.B.D.
work room		275			T.B.D.		T.B.D.		T.B.D.
clerical/reception		275			T.B.D.		T.B.D.		T.B.D.
shared conference room		300	seats 12		T.B.D.		T.B.D.		T.B.D.
academic coordinator		115			T.B.D.		T.B.D.		T.B.D.
grad student stations	5	80			T.B.D.		T.B.D.		T.B.D.
testing rooms	4	120			T.B.D.		T.B.D.		T.B.D.
			2,285		2,299		1,840		2,469
<b>Category 300</b>									
<b>Category 400</b>									
<b>STUDY SPACE</b>									
4 person study	8	120			8	1,080		8	1,080
8 person study	6	240			4	956		6	2,174
12 person study	4	360			4	1,416		6	2,886
open seating	622	30	per seat	800 + CS	18,314	640 + CS	21,190	690 + CS	24,225
	750	22,500	22,500	912 + CS	21,766	792 + CS	25,624	882 + CS	30,365
<b>COLLECTIONS</b>									
general		1,309		single units	1,900	single units	1,794	single units	2,022
reference		231		sq. ft.	1,830	sq. ft.	2,500	sq. ft.	19,383
					172		242		236

gov't documents		345		4,244	404	4,029	416	4,076
bound periodicals		238		2,677	254	2,686	254	2,717
periodicals back issues		252		669		669		669
microfilm		183		505		505		505
video/dvd		32						
cassettes		9						
textbooks		64		1,572				
PA collection		112	112	1,228	112	1,228	112	1,228
rare books		6		300		300		300
			2,184	30,567	2,806	29,454	3,040	31,378
<b>ARCHIVES - CONCEPT</b>								
allowance		1,000		668		854		1,661
			1,000	668		854		1,661
<b>PROCESSING</b>								
circulation work area	3	150		845		159		159
interlibrary loan work space		150		203		225		225
circulation/ILL conference		120			1	246	1	246
periodicals office		115		100		150		150
periodicals work area		150		150		200		200
reference offices	3	115	2	426	3	405	3	405
gov't documents office		115		115		160		160
gov't doc. asst./work area		360		250		160		160
geographical information system office		115		238		200		200
geographical information work stations	3	120				341		341
binding office		115						
collections management offices	3	115	3	1,258		376		376
collections management clerical/recap.		115						
on-line catalog stations				670				
microfiche								
circulation desk stations	2	150		563		505		505
reserves/periodicals		150				320		320
interlibrary loan stations	3	150		611		673		673
periodicals desk		150		150				
reference desk station		240				183		183
gov't documents desk		120				384		384
cataloging	8	220		1,386		2,029		2,029
receiving stations	4	120		1,020		440		440
collections management holding/storage		400				382		382
staff lounge/toilets		600		312		611		611
				8,297		8,149		8,149
<b>Category 400</b>				61,298		64,061		71,561
<b>etc.</b>								
janitor's closet				259		422		422
loading dock				850		841		841
electrical room				242		363		363
mechanical room				999		999		999
a/v storage				44		44		44
computer storage				44		44		44
server				62		118		118
				2,500		2,831		2,831
<b>etc.</b>				2,500		2,831		2,831
<b>Building Total SF (Assignable)</b>				74,505		77,735		87,482
<b>Building Grossing Factor</b>				1.442856		1.447225		1.388857
<b>Building Total SF (Assignable + Non-Assignable)</b>				107,500		112,500		121,500

LEHMAN MEMORIAL LIBRARY  
 SHIPPENSBURG UNIVERSITY OF PENNSYLVANIA

COMPARATIVE BUDGETS

PRELIMINARY 11/20/02

	Basic Program	Full Program	Expanded Program
Program area:	107,500	112,500	121,500
Existing area	<u>75,000</u>	<u>75,000</u>	<u>75,000</u>
Additional area	32,500	37,500	46,500

BASIC PROGRAM (\$8 million – Addition without renovation)

New: 32,500 sf @ \$190/sf = \$6,175,000  
 Renovation allowance @ 300,000

Sub total A \$6,475,000

Project costs @ 25% 1,618,750

Sub total B \$8,093,750

20% construction cost escalation – 5 year projection \$1,618,750

TOTAL \$9,712,500

FULL PROGRAM - Additional Seating (\$18 million)

New: 37,500 sf @ \$190/sf = \$7,125,000  
 Ren: 75,000 @ \$100/sf = 7,500,000  
 South façade  
 renovation: allowance 300,000

Sub total A \$14,925,000

Project costs @ 25% 3,731,250

Sub total B \$18,656,250

20% construction cost escalation – 5 year projection \$3,731,250

TOTAL \$22,387,500



EXPANDED PROGRAM— additional program (\$20 million)

New: 46,500 sf @ \$190/sf = \$8,835,000  
Ren: 75,000 sf @ \$100 = 7,500,000  
South façade  
renovation allowance: 300,000

Sub total A \$16,635,000

Project costs @ 20% 3,327,000

Sub total B \$19,962,000

20% construction cost escalation – 5 year projection 3,992,400

TOTAL \$23,954,400

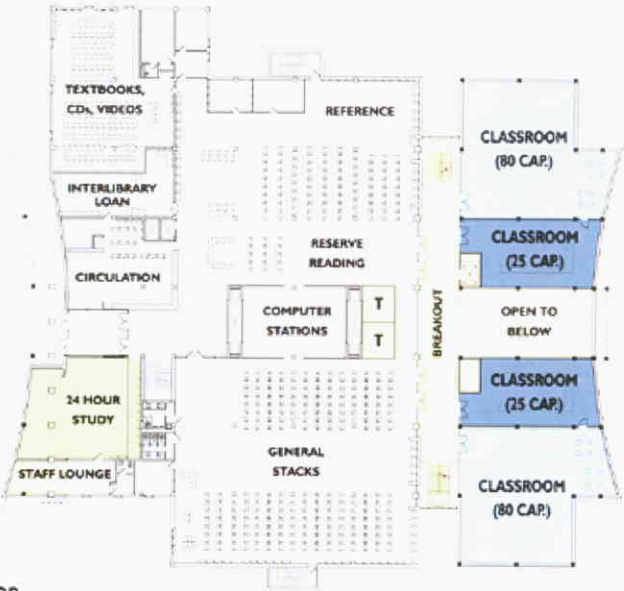
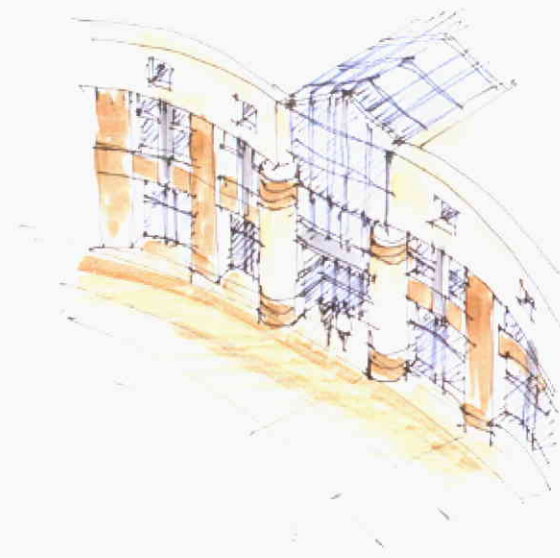
**February 28, 2003 Submission**



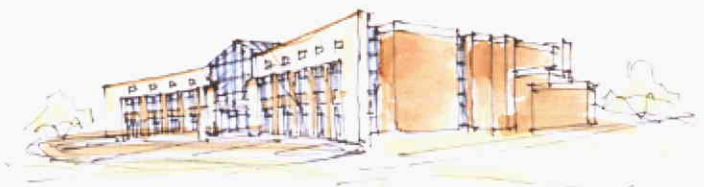
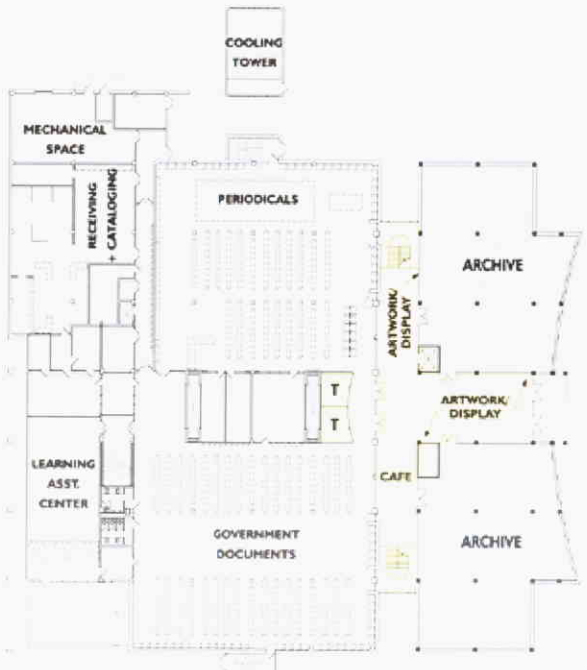
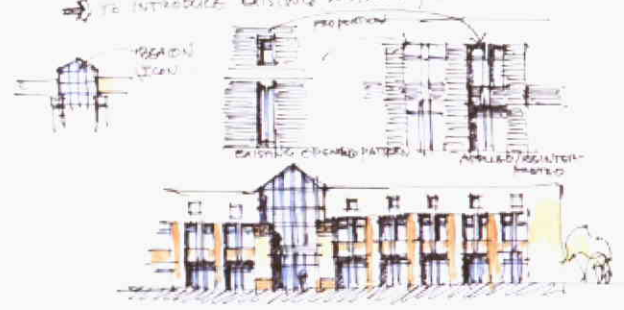
- 1. Massing Study**
- 2. Conceptual Plans**

# Ezra Lehman Memorial Library New Addition and Renovation

Shippensburg University



- \* CAMPUS LIBRARY
  - BEACON OF ACADEMIC ACTIVITY
  - FOCAL POINT OF CAMPUS BUILDINGS
  - NEEDS ARCHITECTURAL CHARACTER
- \* ADDITION/RENOVATION
  - NEEDS TO RESPOND TO EXISTING/ESTABLISHED CONTEXT
  - TO INTRODUCE EXISTING VOCABULARY & REINTERPRET

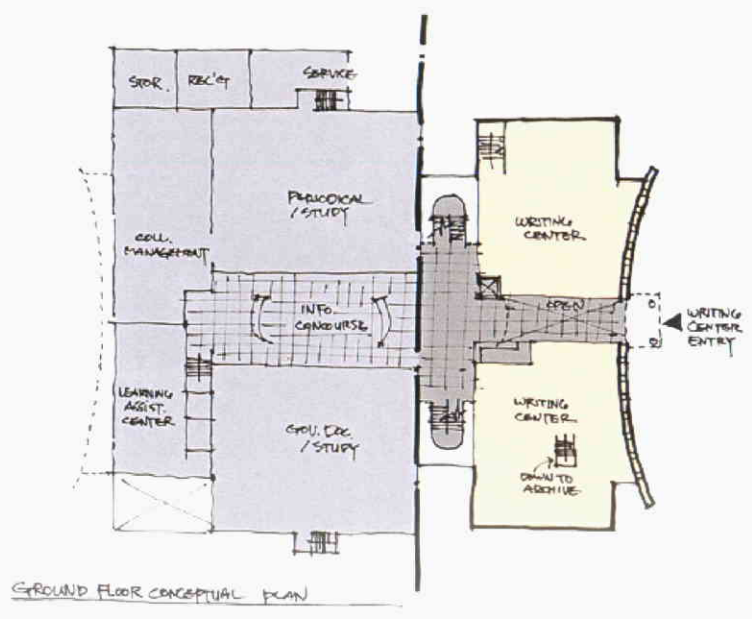
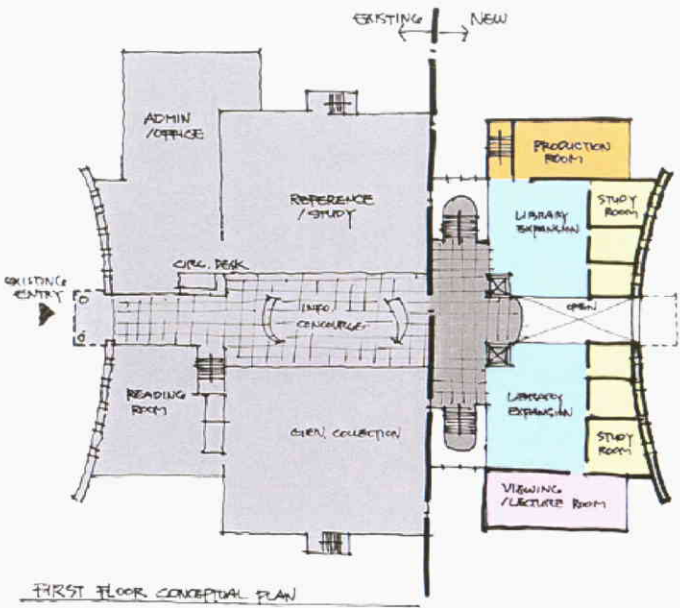
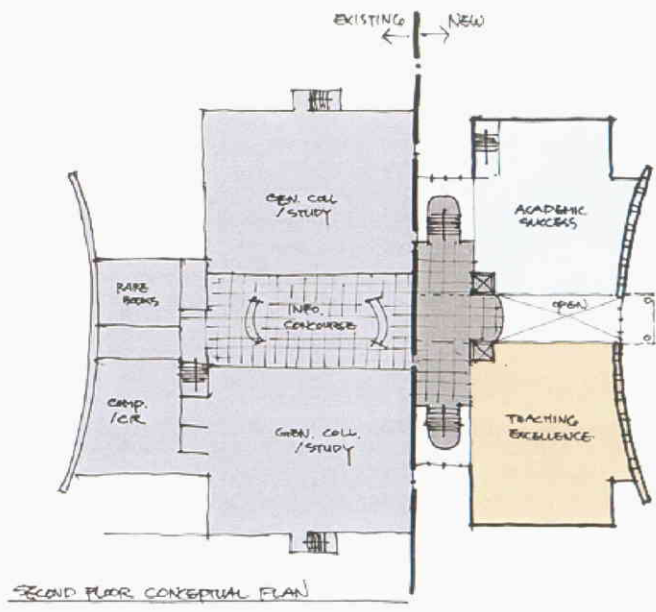


scale 1" = 20'-0"

**August 2003 Submission**



**1. Conceptual Floor Plans & Elevation Study**

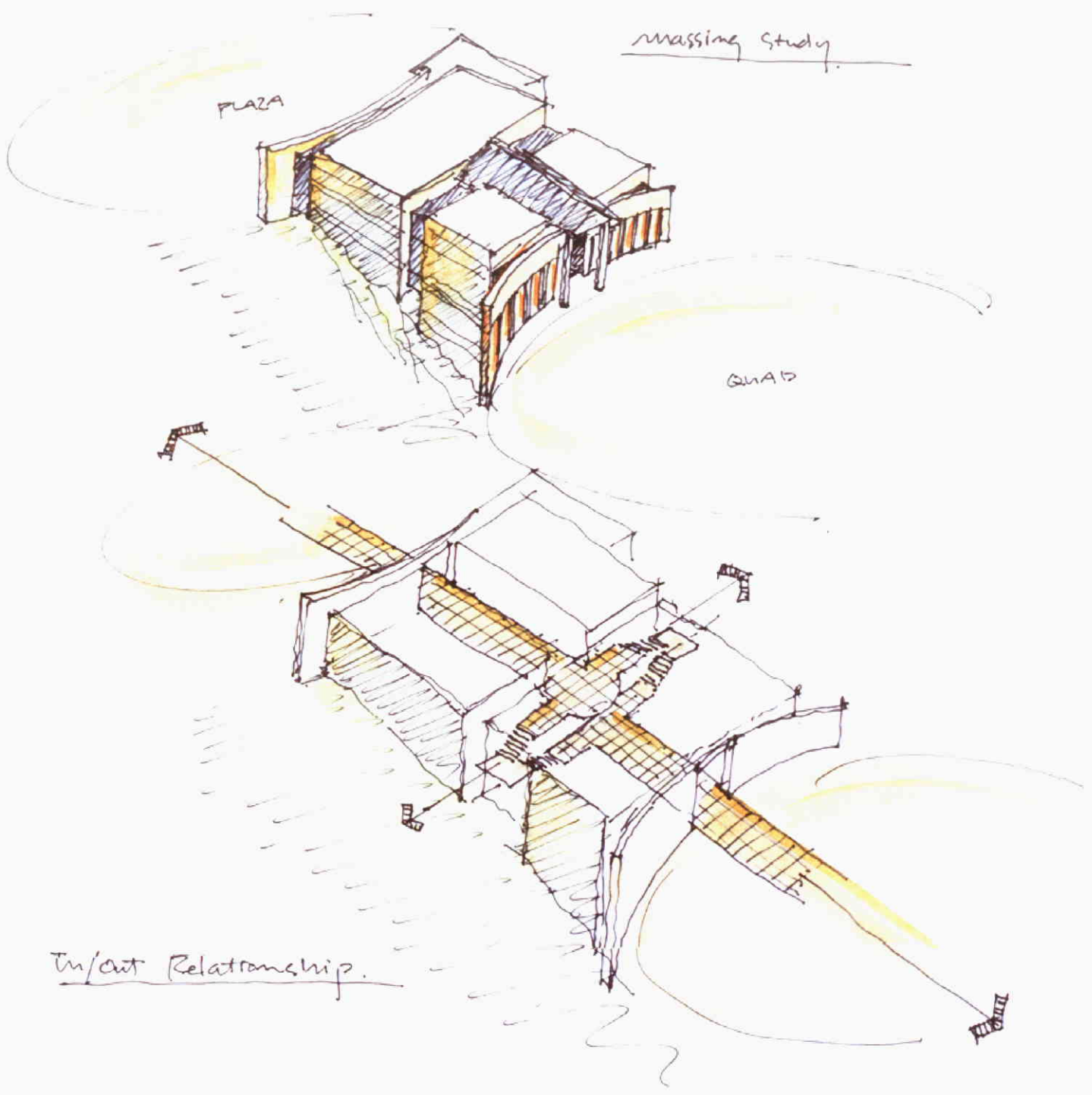


massing study

PLAZA

QUAD

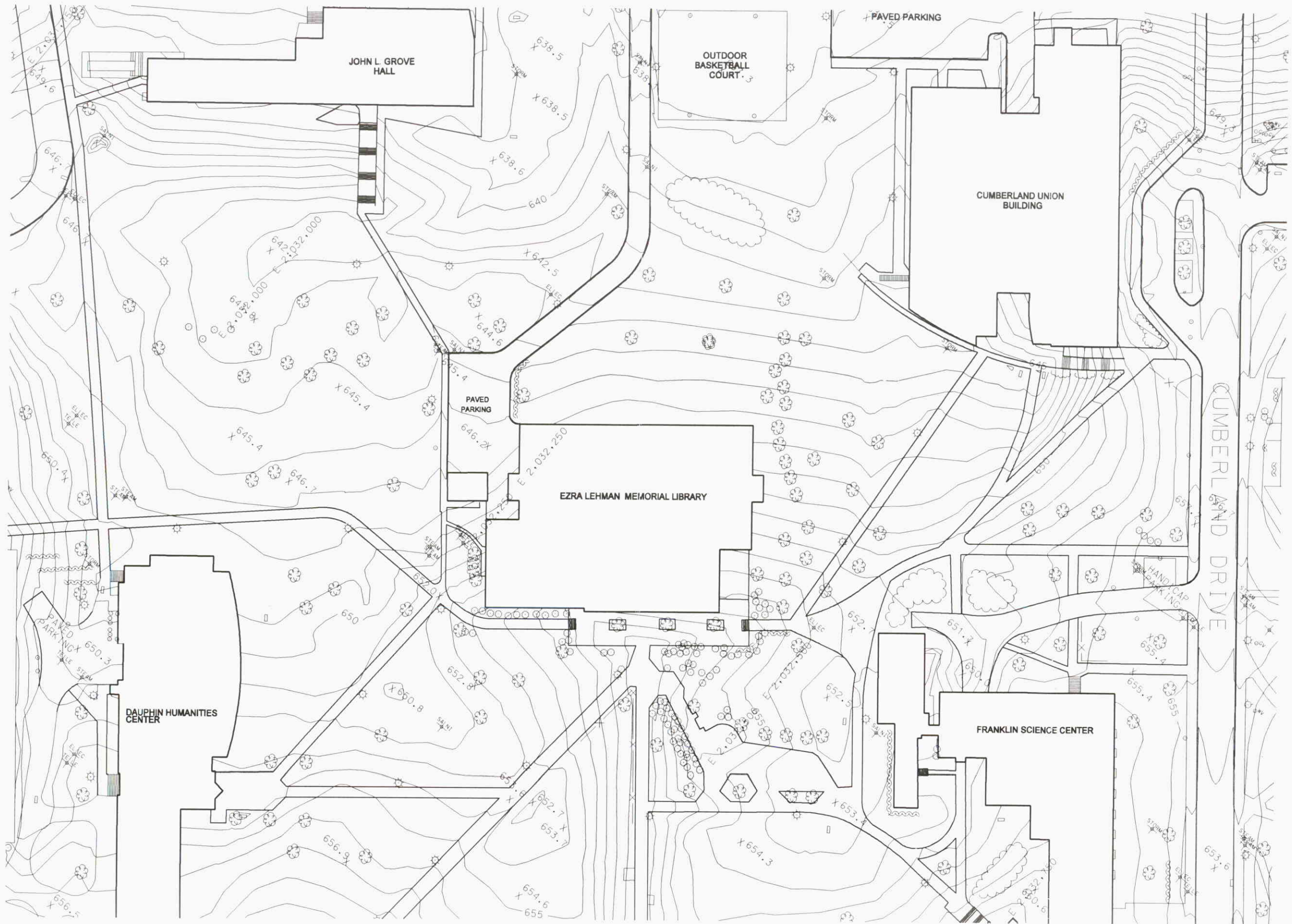
In/out Relationship.



## Existing Conditions



- A) Site Plan
- B) Ground Floor Plan
- C) First Floor Plan
- D) Second Floor Plan
- E) Roof Plan
- F) North & East Elevations
- G) South & West Elevations

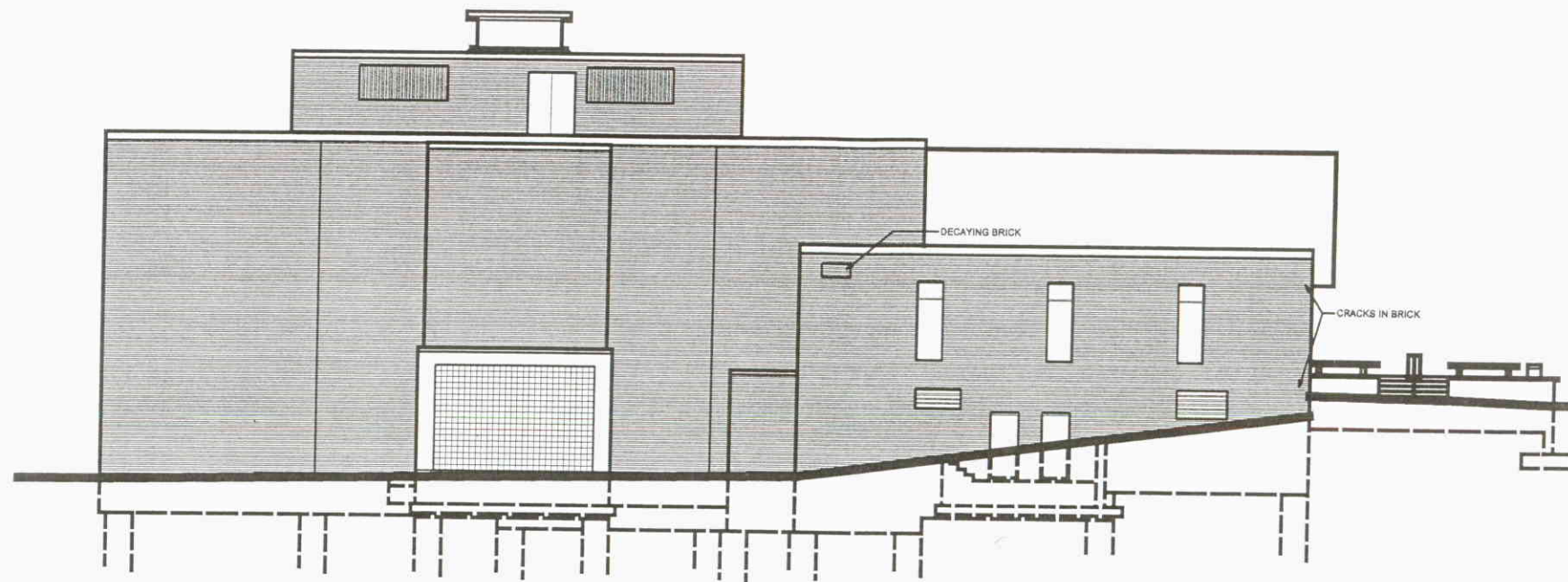


Existing Site Plan

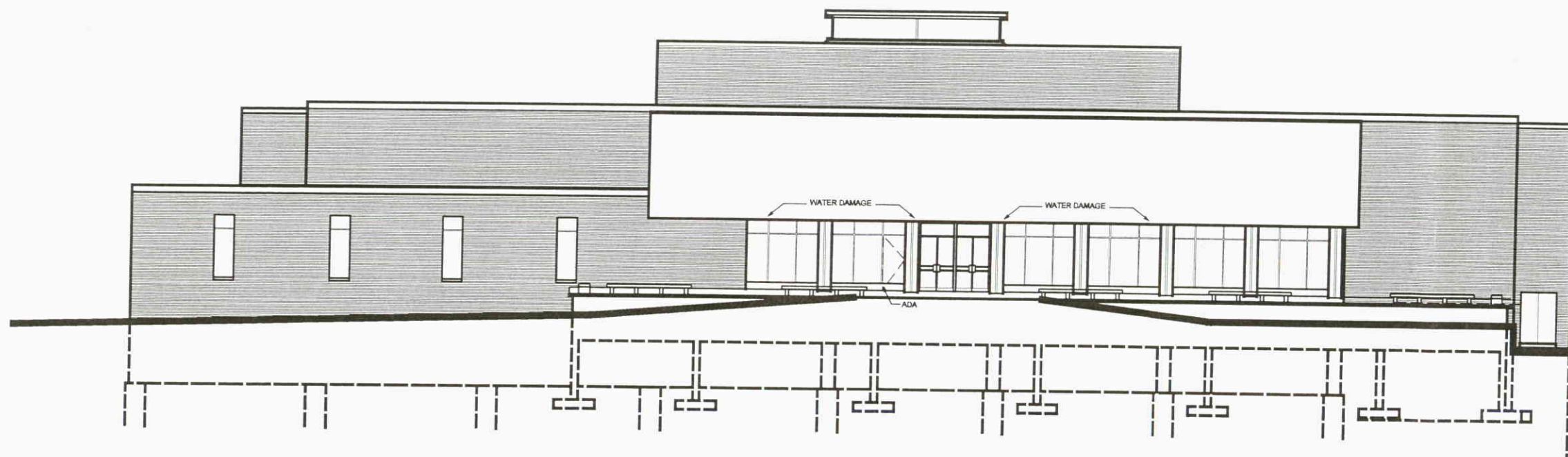
Ezra Lehman Memorial Library







West Elevation

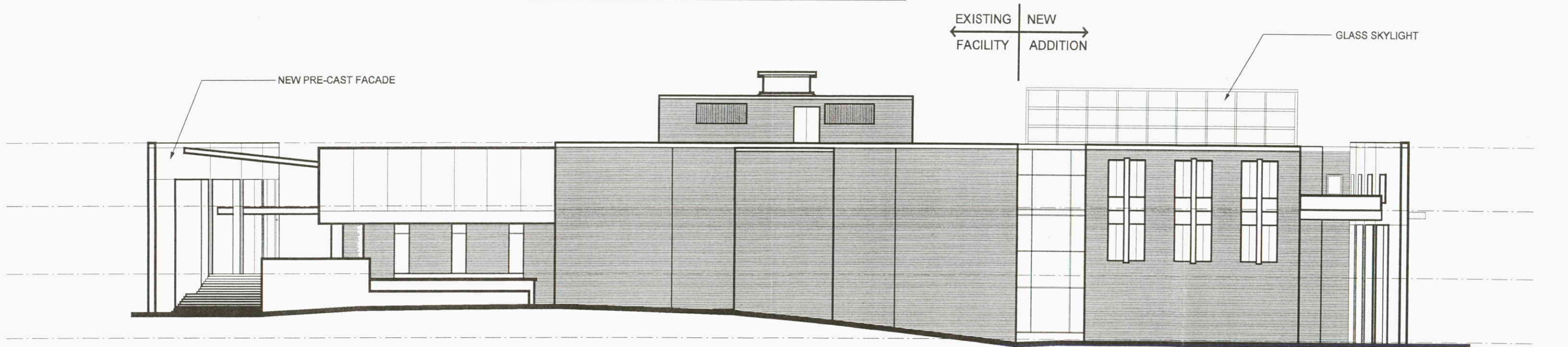


South Elevation

Ezra Lehman Memorial Library



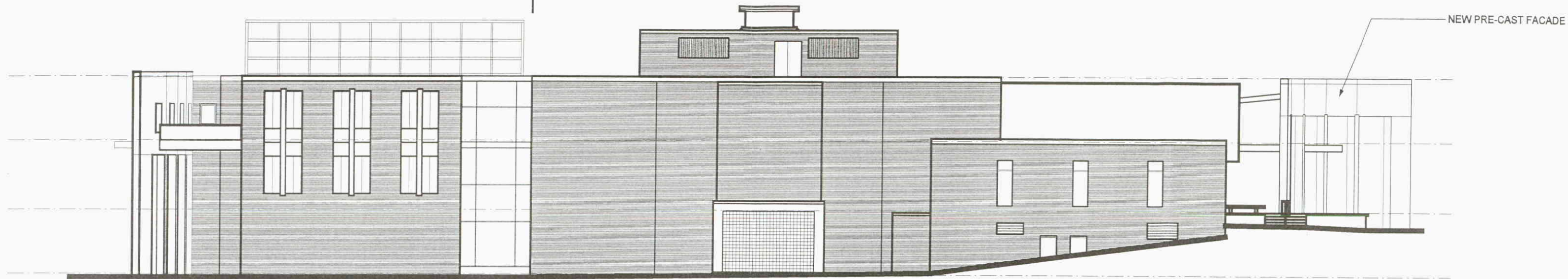
North Elevation - Showing New Addition



East Elevation - Showing New Addition

SCALE:  
0 5 10 20

NEW EXISTING  
ADDITION FACILITY

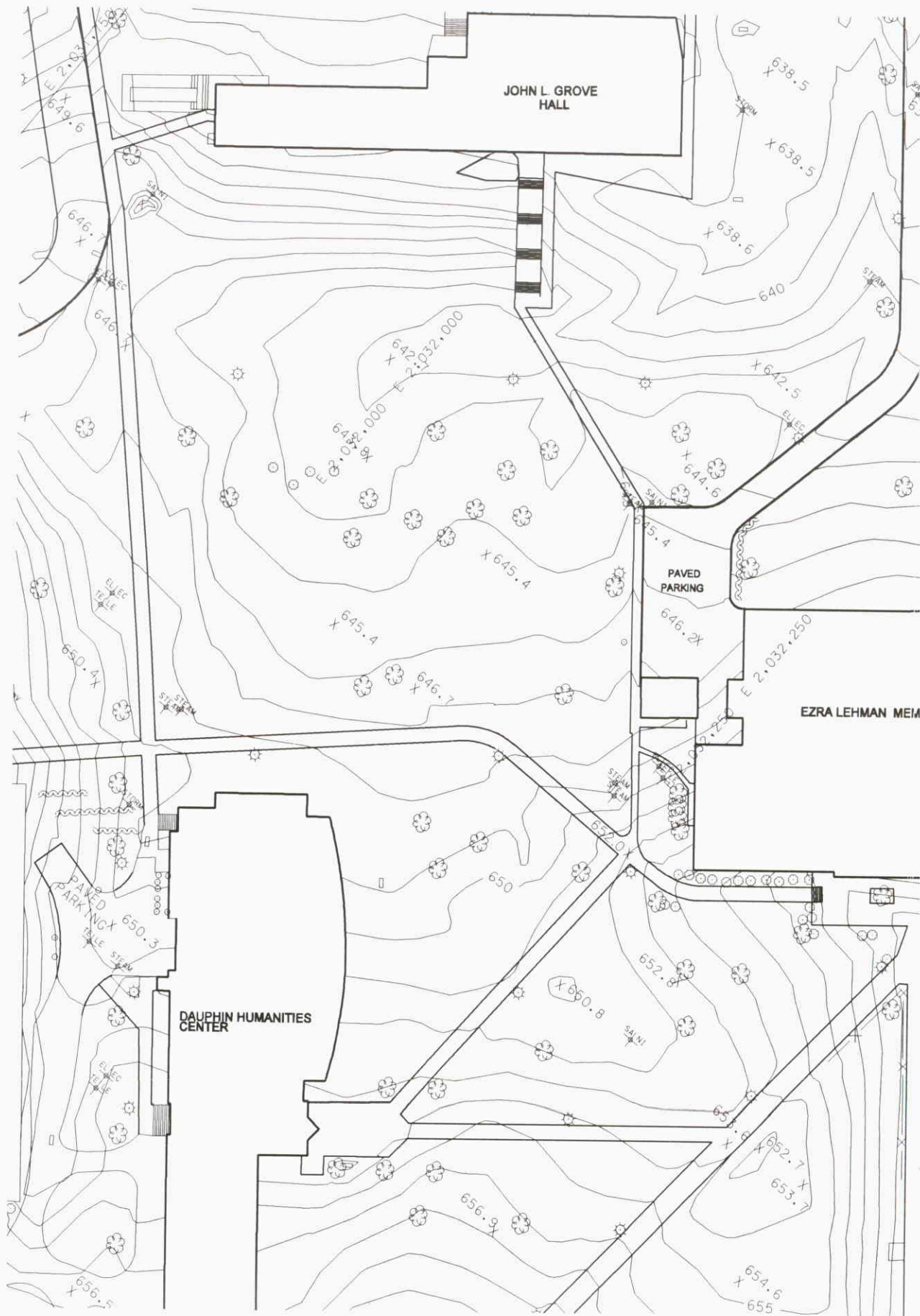


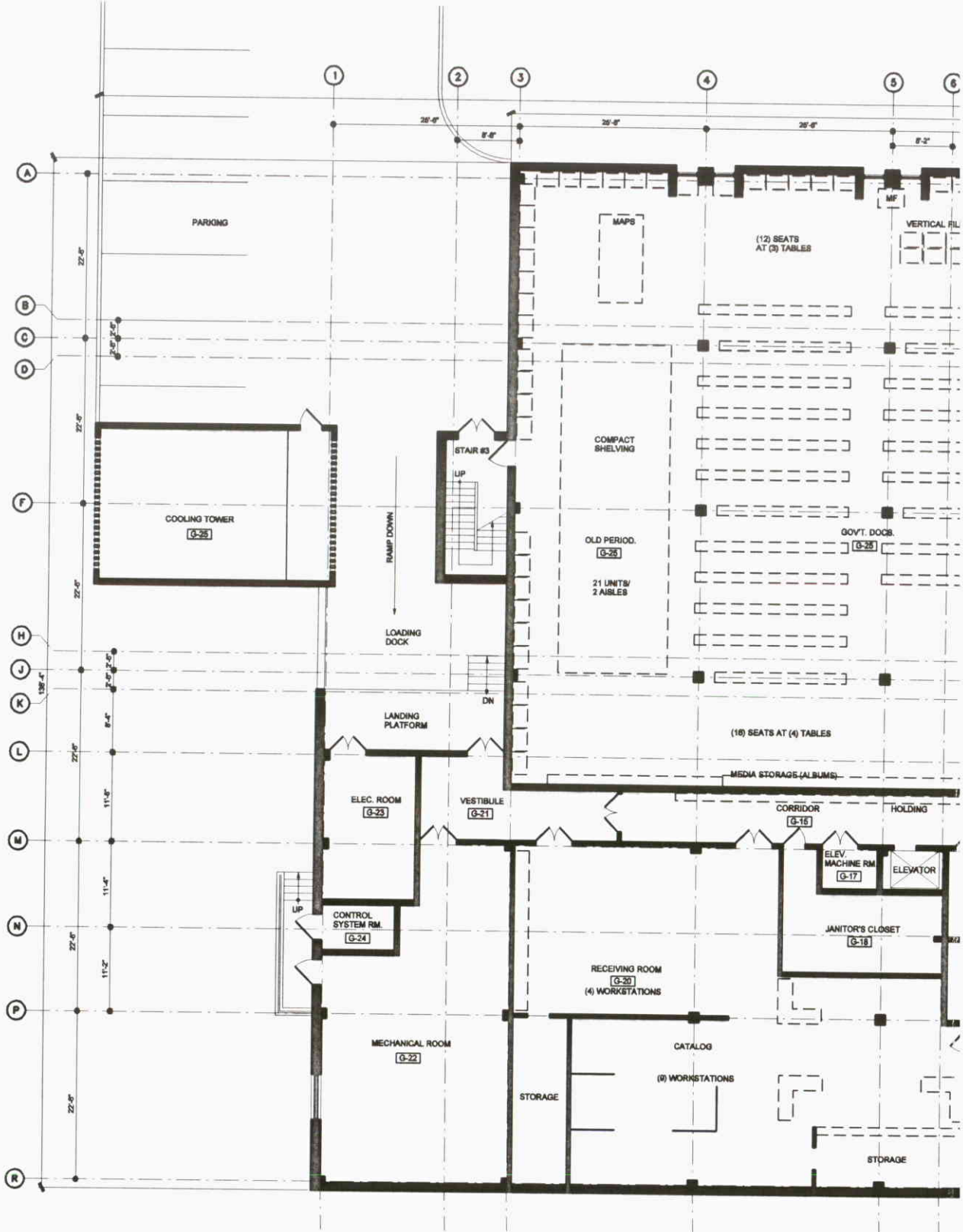
West Elevation - Showing New Addition



South Elevation - Showing New Addition

SCALE:  
0 5 10 20

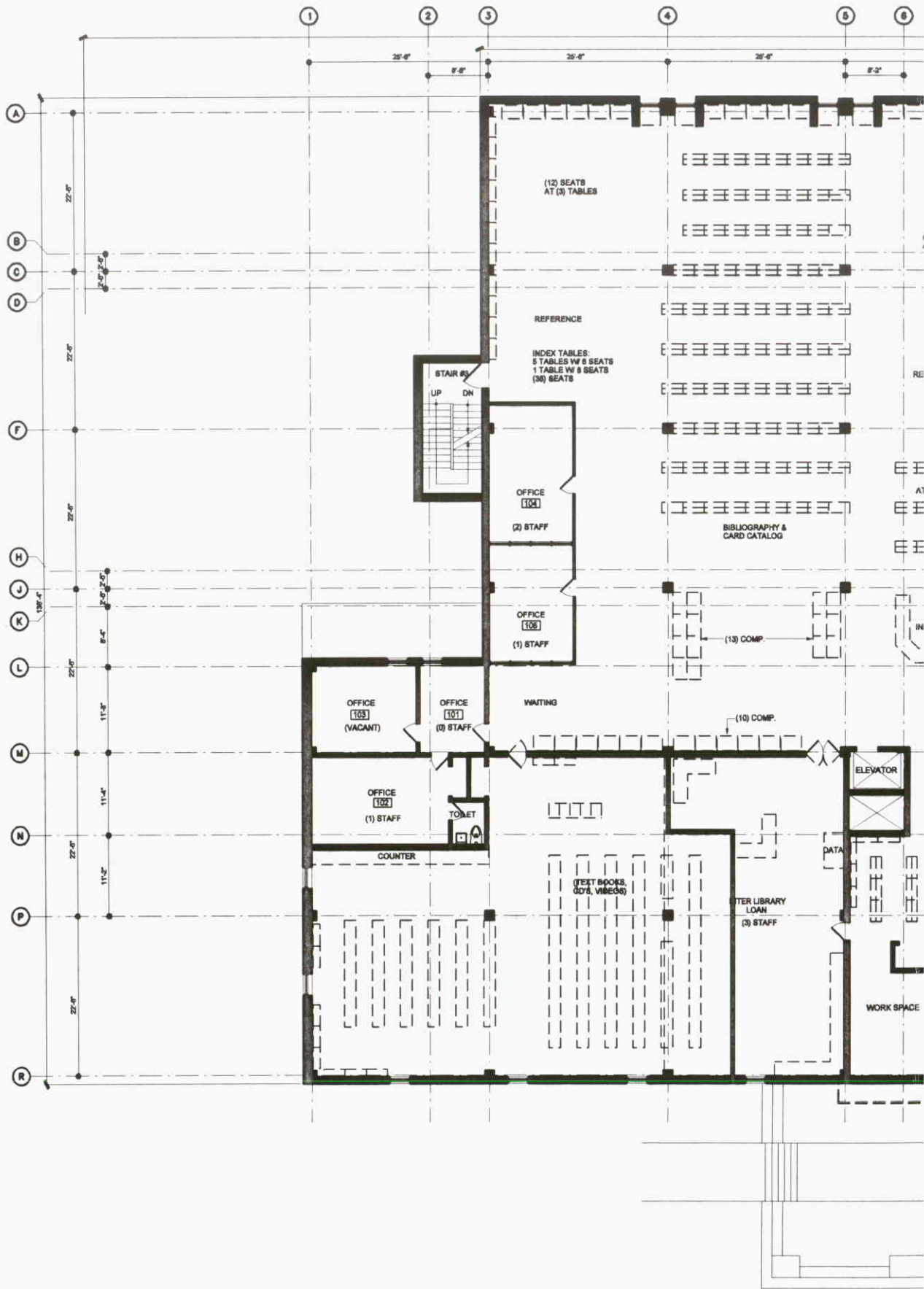


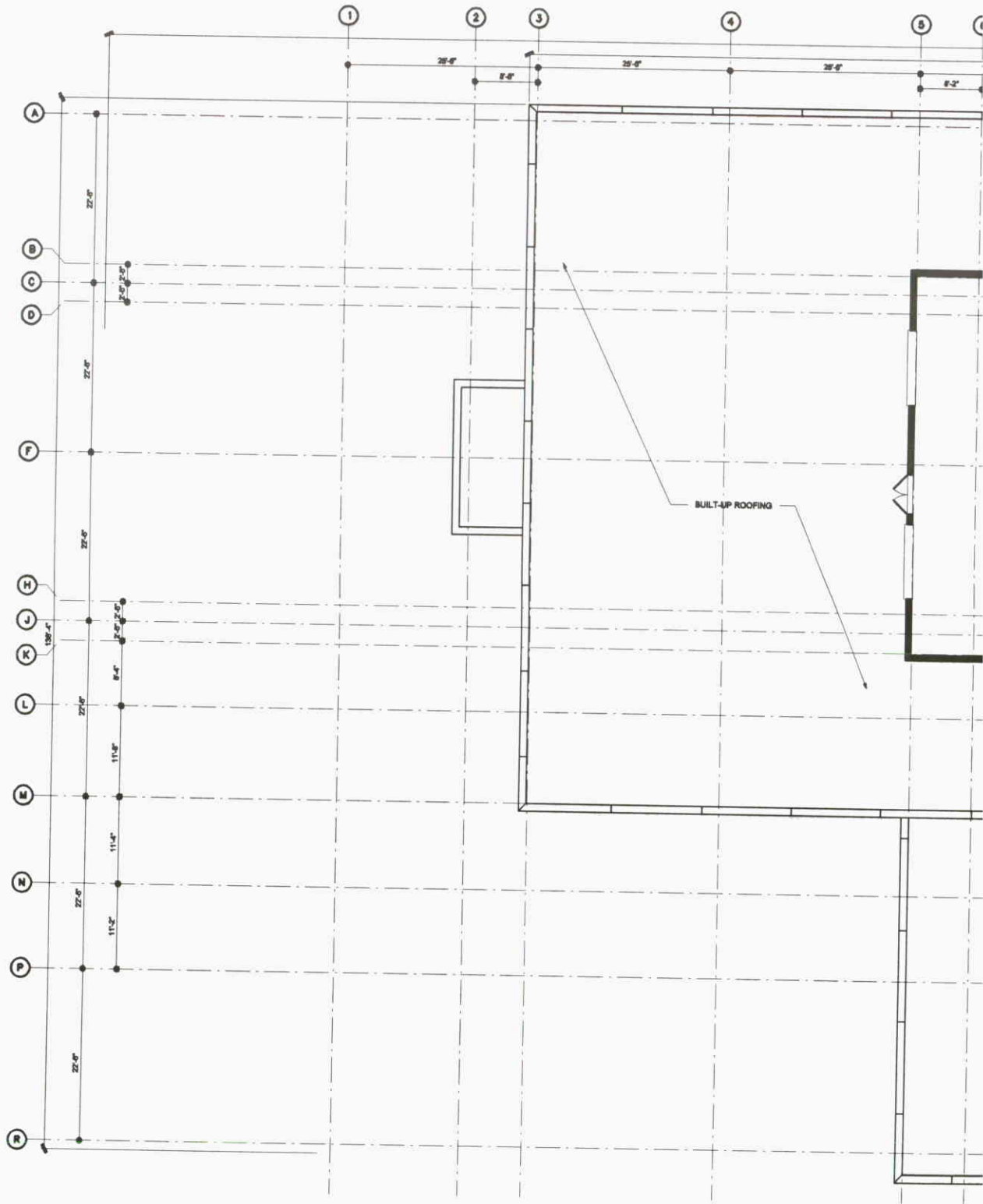


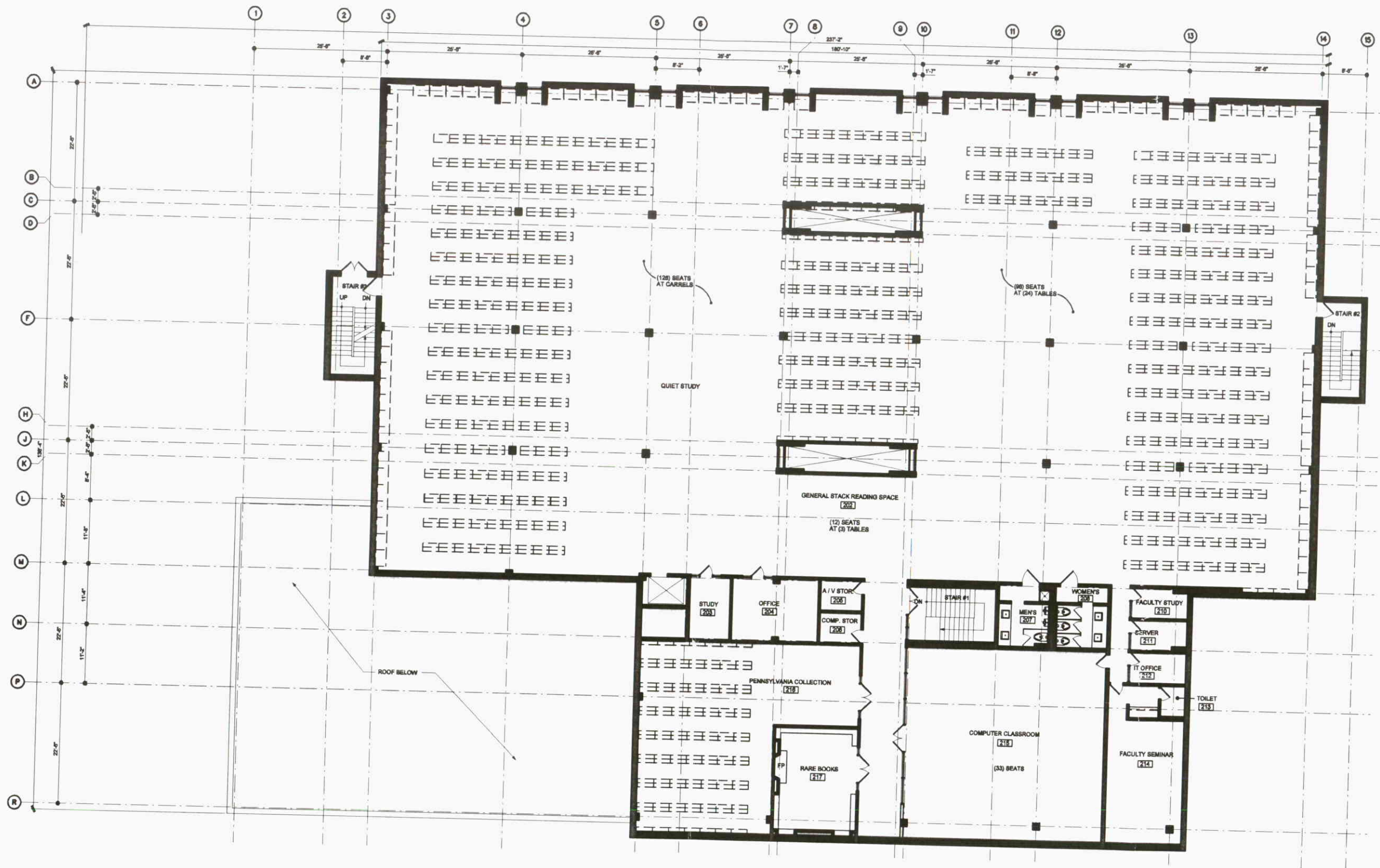
Existing Ground

Ezra Lehman Men









Existing Second Floor Plan  
Ezra Lehman Memorial Library







**Burt Hill  
Kosar Rittelmann  
Associates**

Architecture  
Engineering  
Interior Design  
Landscape  
Master Planning  
Research

# Meeting Minutes

from: Eric Farrell

February 28, 2003

---

**Subject/Project Number:**

Shippensburg University  
Ezra Lehman Memorial Library  
Feasibility Study  
Burt Hill Project #02938.00

---

**Meeting Number:**

1

---

**Project Phase:**

Feasibility Study

---

**Meeting Location:**

President's Conference Room

---

**Meeting Purpose:**

Review Programming Plans

---

**Attendees:**

Dr. Anthony Ceddia – President  
Dr. James Coolson – Associate Provost/Dean of  
Graduate Studies  
Madelyn Valunas –Associate VP of  
Information Technologies and Services  
Dr. Patricia Spakes– Provost  
Gary Thresher - Facilities  
Dr. Rick Ruth– VP of Information  
Technologies and Services  
Madelyn Valunas –Dean of Library and Media  
Services  
**Burt Hill Kosar Rittelmann Associates**  
Eric Farrell  
David Madeira

---

**Distribution:**

**All Attendees**  
Lance Bryson

---

**Comments:**

1. Dr. Ceddia to review the programming plans for the Ezra Lehman Library Renovation and Addition.
2. Dr. Ceddia stated that the initial programming plans did not provide enough space for the Creative Writing Center.
3. At this meeting Burt Hill provided sketches show the Creative Writing Center as the dominate program space in the new addition. The sketches showed:
  - Archives in a possible Basement,

1735 Market Street  
53rd Floor  
Philadelphia, PA 19103  
215.751.2900  
FAX 215.751.2901



**Burt Hill  
Kosar Rittelmann  
Associates**

# Meeting Minutes

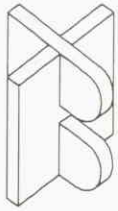
Project No.: 0293800

February 28, 2003

Meeting Number 1

- The Creative Writing Center on the Ground Floor,
  - Library Expansion, Study Rooms, Production Room and Viewing/Lecture Room on the First Floor.
  - Academic Success and Teaching Excellence on the Second Floor
  - Additionally the sketched showed a new curved façade on the front of the existing library. The sketches showed a large atria/lobby area which could be used for receptions and displaying artwork.
4. Dr. Ceddia stated that he liked the direction the new sketches were going.
  5. Dr. Ceddia stated he saw the addition laying out as follows:
    - No Basement
    - Library Archives on the Ground Floor
    - Two large flexible Classrooms on the First Floor
    - Writing Center on the Second Floor
  6. Burt Hill will revise the plans as per Dr. Ceddia's directions and develop both the plans and exterior elevations.
  7. Burt Hill will meet with Dr. Ceddia in Early May to present developed plans and exterior elevations.
  8. Following the May meeting Burt Hill, and approval from the University, will finalize the Feasibility Study by the end of May.

**This memorandum represents our understanding of the events which transpired and the actions which were taken. If they do not conform to a**



**Burt Hill  
Kosar Rittelmann  
Associates**

# Meeting Minutes

Project No.: 0293800

February 28, 2003

Meeting Number 1

recipient's understanding, prompt written notice must be communicated to the writer. If no corrections or objections are made, this memorandum will be relied upon as a factual interpretation of this meeting.

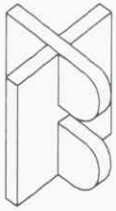
Submitted by,

**BURT HILL KOSAR RITTELMANN ASSOCIATES**

/s/

Eric Farrell

March 5, 2003



**Burt Hill  
Kosar Rittelmann  
Associates**

Architecture  
Engineering  
Interior Design  
Landscape  
Master Planning  
Research

# Meeting Minutes

from: Eric Farrell

May 5, 2003

**Subject/Project Number:**

Shippensburg University  
Ezra Lehman Memorial Library  
Feasibility Study  
Burt Hill Project #02938.00

**Meeting Number:**

2

**Project Phase:**

Feasibility Study

**Meeting Location:**

President's Conference Room

**Meeting Purpose:**

Review Programming Plans

**Attendees:**

Dr. Anthony Ceddia – President  
Dr. James Coolen – Associate Provost/Dean of  
Graduate Studies  
Madelyn Valunas –Associate VP of  
Information Technologies and Services  
Dr. Patricia Spakes– Provost  
Dr. Rick Ruth– VP of Information  
Technologies and Services  
Madelyn Valunas –Dean of Library and Media  
Services  
Lance Bryson--Facilities  
**Burt Hill Kosar Rittelmann Associates**  
Eric Farrell  
David Madeira  
Lois Mathison

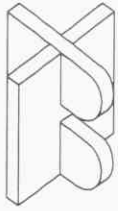
**Distribution:**

**All Attendees**  
Lance Bryson

Burt Hill presented revised programming plans and perspective sketches based on comments received at the previous of February 28, 2003. The following comments were made:

1. Burt Hill presented schematic plans showed the following:
  - Ground Floor Addition: Archive Space, Addition Entry, Display Area and Breakout Space.

1735 Market Street  
53rd Floor  
Philadelphia, PA 19103  
215.751.2900  
FAX 215.751.2901



**Burt Hill  
Kosar Rittelmann  
Associates**

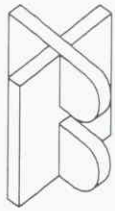
# Meeting Minutes

Project No.: 0293800

May 5, 2003

Meeting Number 2

- First Floor Addition: Two classrooms for 80 student capacity. Two classrooms for 25 student capacity. Open atria area to floors above and below. Breakout Space.
  - Second Floor Addition: Writing Center. Open atria area to floors below. Breakout Space.
  - New façade on existing main entrance.
2. The Learning Assistance Center shown on the Ground Floor Plan is part of Academic Program Services shown on the 2<sup>nd</sup> floor and should be kept together. This frees up space on the Ground Floor for other program area, like Group Study Space, which is currently not identified on the floor plans.
  3. Group Study Space could also be located on the 1<sup>st</sup> floor where the 25-capacity classrooms are shown.
  4. The new Toilet Rooms shown in the existing Main Library need to be accessible from the new addition. If there is an event scheduled after hours, the Main Library will need to be locked off.
  5. Dr. Ceddia asked whether stacks will still be a requirement in the Library of the Future. Madelyn stated that she thought stacks would indeed be a component, though expansion space would not need to be provided.
  6. The center study carrels may be replaced with tables for 4 or 6 chairs. The perimeter carrels will remain but will require renovation/replacement.
  7. The 80 capacity classrooms shown on the first floor can accommodate the computer classrooms being displaced due to the reconfiguration of existing space. Because of State Guidelines, the campus classroom count cannot change unless the student population increases.



**Burt Hill  
Kosar Rittelmann  
Associates**

# Meeting Minutes

Project No.: 0293800

May 5, 2003

Meeting Number 2

8. The 24 hour study area on the first floor should be revised to reflect a connection to a breakout area with vending and toilets. Move the staff lounge to the ground floor near the patio.
9. Should the patio be in-filled to gain interior space? It does allow light into the ground floor, so a "glass roof" may warrant consideration if this is done.
10. Extend the loading dock as shown on previous plans.
11. Curved construction is costly. The "rear" façade could maintain the curved wall like wings, but keep the building square beyond. Square off columns currently shown as round. The façade facing the Quad is equally as important as the "back".
12. Dr. Ceddia stated that he liked the direction the new sketches were going. Burt Hill will revise the plans as per Dr. Ceddia's directions and will further develop both the plans and exterior elevations before August 20, 2003.

**This memorandum represents our understanding of the events which transpired and the actions which were taken. If they do not conform to a recipient's understanding, prompt written notice must be communicated to the writer. If no corrections or objections are made, this memorandum will be relied upon as a factual interpretation of this meeting.**

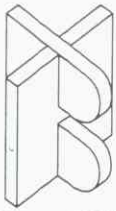
Submitted by,

**BURT HILL KOSAR RITTELMANN ASSOCIATES**

/s/

Eric Farrell

March 5, 2003



**Burt Hill  
Kosar Rittelmann  
Associates**

Architecture  
Engineering  
Interior Design  
Landscape  
Master Planning  
Research

# Meeting Minutes

January 13, 2004

from: Eric Farrell

**Subject/Project Number:**

Shippensburg University  
Ezra Lehman Memorial Library  
Addition Feasibility Study  
SU Project #2002/6  
Burt Hill Project #:02938.00

**Meeting Number:**

3

**Project Phase:**

Feasibility Study

**Meeting Location:**

President's Conference Room

**Meeting Purpose:**

Final Presentation of Programmatic Plans, Elevations, Site Plan and Rendering

**Attendees:**

Lance Bryson--Facilities  
Dr. Anthony Ceddia – President  
Dr. Hector Maymi-Sugranes –Associate VP of  
Information Technologies and Services and  
Dean of Library and Media Services  
Dr. Rick Ruth– VP of Information  
Technologies and Services  
Dr. Patricia Spakes – Provost  
Terry Starr – Facilities  
Mary Stewart – Head of English Department  
Dr. Kim Van-Alkemde – English Department

**Distribution:**

All Attendees

**Burt Hill Kosar Rittelmann Associates**

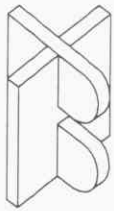
Eric Farrell  
David Madeira  
Lois Mathison

**Comments:**

1. Burt Hill presented the final feasibility study programmatic floor plans, elevations, and site model. A rendering of the new addition was presented as well.
2. The **Ground Floor Plan** programmatic spaces are as follows:

Existing Library:	Periodicals, Government Archives, Receiving Room, Collection Management, Group Study, Staff Lounge, Microfilm, Multi-Media, Geographical Info. System office.
-------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------

1735 Market Street  
53rd Floor  
Philadelphia, PA 19103  
215.751.2900  
FAX 215.751.2901



**Burt Hill  
Kosar Rittelmann  
Associates**

# Meeting Minutes

Project No.: 0293800

January 13, 2004

Meeting Number 3

New Addition: Breakout/Display, Archive Space, a 3-story Atria Space, and a café.

The main entrance into the new addition is on the Ground Floor.

The **First Floor** programmatic functions are as follows:

Existing Library: Main Entrance, Circulation Desk, 24 Hour Study / Vending, General Stacks, Reference, Computer Stations, Text Books, CD's & Videos, Dean's Office.

New Addition: Breakout Space, Two Lecture Rooms at a capacity of 80, Two Lecture Rooms at a capacity of 25.

The main entrance into the existing library is on the First Floor.

A new façade screen is incorporated into the project. This façade screen will enhance the existing south building elevation as well create a stronger language between the adjacent buildings and the proposed plaza.

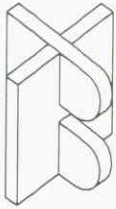
The **Second Floor** programmatic functions are as follows:

Existing Library: General Stacks, Quiet Study / Reading Space, Academic Success, Academic Program Services / Learning Assistance Center.

New Addition: Breakout Space, Writing Center, Outdoor Reading Area.

3. Dr. Hector Maymi-Sugranes stated that a café was planned on the First Floor where 24 Hour Study is shown. It was understood that once the project moved forward the location of the café will be reviewed.
4. Dr. Ceddia stated he does not want to see the mechanical units if they are to be located on the existing library roof. The mechanical units should be





**Burt Hill  
Kosar Rittelmann  
Associates**

# Meeting Minutes

Project No.: 0293800

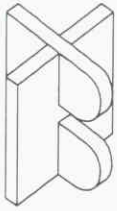
January 13, 2004

Meeting Number 3

covered with a screen or located off to the side of the building. No units should be located on the roof of the new addition.

5. Lance Bryson requested the space guidelines and meeting minutes get incorporated into the feasibility report. The space definition names should coincide with the University space guidelines.
6. Dr. Patricia Spakes stated that the flexibility of the Second Floor Writing Center allows the University to determine, at a future dated, the specific programmatic layout of the space. Dr Spakes stated there is the possibility of having computer stations on one side and seating for lecture and work shops on the other.
7. The existing Second Floor computer room, Pennsylvania Collection, and Rare Books are moving to the new addition. This allows Academic Success, Academic Program Services, and the Learning Assistance Center to occupy the vacated space.
8. Burt Hill stated that the estimated probable cost of construction did not include equipment and furniture, soft costs (permitting, fees, etc.), or escalation.
9. Lance Bryson stated that money was being allocated for replacing the lighting and controls in the existing library.
10. Lance Bryson requested that the space definition names coincide with the University space guidelines.
11. Burt Hill will revise the report and submit to Lance Bryson for review and comments.

**This memorandum represents our understanding of the events which transpired and the actions which were taken. If they do not conform to a recipient's understanding, prompt written notice must be communicated to**



**Burt Hill  
Kosar Rittelmann  
Associates**

# Meeting Minutes

Project No.: 0293800

January 13, 2004

Meeting Number 3

the writer. If no corrections or objections are made, this memorandum will be relied upon as a factual interpretation of this meeting.

Submitted by,

**BURT HILL KOSAR RITTELMANN ASSOCIATES**

/s/

Eric Farrell

January 13, 2004