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**BELMONT PUBLIC LIBRARY
FEASIBILITY STUDY**

BELMONT, MA

**FINAL REPORT
MARCH 2000 - MARCH 2001**



**TAPPÉ ASSOCIATES, INC.
ARCHITECTURE AND PLANNING**

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**BELMONT PUBLIC LIBRARY
BELMONT, MA**

**FINAL REPORT MARCH 2001
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Acknowledgements

This study represents the culmination of many hours of work and discussion between the Library Committee, the Library Director, the Staff, Trustees and Consultants. The time and effort of those involved is appreciated and we thank you.

Some of the participants in this process whose involvement was essential in the completion of this study include:

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Belmont Memorial Library Belmont, MA



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EXECUTIVE SUMMARY

INTRODUCTION



The existing Belmont Memorial Library is a thriving institution with a number of successful programs and buildings that have served the Belmont Community with honor and grace for almost thirty years. However, the library is struggling with cramped quarters that compromise its ability to house its collections and provide patrons with adequate seating to utilize the library holdings while at the library. The Preliminary Summary of Space Needs and Library Building Program, prepared by the Director, Maureen Connors and Library Staff, identify the inadequacies and document the needs analysis.

Tappé Associates, Inc. has evaluated the feasibility of expanding the library on the current site to adequately accommodate the library's twenty-year programmatic goals. Outlined below is a summary of our process and conclusions.

EXISTING CONDITIONS REVIEW

Tappé reviewed the physical site, the site conditions, and the building exterior and interior relative to their ability to accept and integrate with the proposed expansion of library services.



The location of the library, in the heart of Belmont on Concord Avenue, is 1/4 mile from Belmont Center and is directly accessible by major bus routes and the commuter rail line. This location, due in no small part to traditional "perception," was determined to be not only desirable but also preferable. The high school is approximately two blocks away, and the middle school is only about one half of a mile away. Although it is on a major vehicular thoroughfare, the building is also on the border of a large residential section that makes it perfect for pedestrian foot traffic. Although the current boundaries of the site were found to be too small to meet the 20-year goals in regard to expanded parking requirements, acquisition of additional adjacent property was not possible. The indication of the town was always that there were no available parcels of sufficient size located in the Town on which to locate a new facility.

The exterior was found to be in generally good condition for a building 35 years old, and the interior is well preserved.

Based on our observations of the existing conditions of the building itself and the site, the soil has a bearing capacity sufficient to support either an addition or a proposed new building. The building's mechanical systems are generally at the end of their useful life expectancy and in need of replacement (see engineers reports for details). Structural components were deemed to be sound, but the floors in the main reading rooms and stacks on the main and upper levels do not have the ability to accept 150 pound bookstack loads per current building codes. They are designed to accommodate 125 pounds per square foot on the lower floor and 100 pounds per square foot on the main and mezzanine levels. The existing flat roof structure has deflected due to overloading from the mechanical units to the extent that the roof pitches are no longer adequate to fully drain the roof. Hazardous materials were observed in the building including asbestos, oils and lead paint. Preliminary removal/abatement costs were estimated at about \$80,000.

PROGRAM ANALYSIS

Tappé Associates, Inc. has evaluated the twenty-year library program plan, compared it with widely accepted planning standards for public libraries and determined that approximately 32,170 SF of program space is required. However, when an allocation for required non-program space for building systems, the War Memorial, circulation space, walls and restroom facilities is added, a need for the total of 45,060 SF shown in the Program Summary is required.

DESIGN PROCESS

Initially, several Conceptual Adjacency Diagrams were developed for consideration, each exploring different footprint and program configurations on the existing site. Concurrently with the development of the adjacency program diagram alternatives, it was noted that there were a number of site factors that limited development. In 1965, at the time of the construction of the existing Memorial Library, the existing Wellington Brook ran in a serpentine path through the middle of the site. The brook was moved at that time to a man made channel which runs along the back portion of the site.

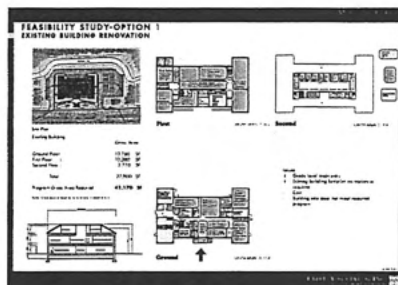
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Due to the provisions of the Commonwealth of Massachusetts Rivers Protection Act, it is felt that development will be limited in the direction toward the brook. As noted above, it was determined that the existing site was not adequate to accommodate the proposed program and desired parking. Several Site Design Options were developed and explored in regard to these limits of the site as well as site zoning with input from the staff, community and Trustees.

PRELIMINARY DESIGN ALTERNATIVES

From the preferred Conceptual Adjacency Diagram and Site Options, various Preliminary Design Alternatives were developed. These include Renovation of the Existing Building (Option 1), Renovation of the Existing Building with a Major Addition (Option 2) and construction of a New Building (Option 3).

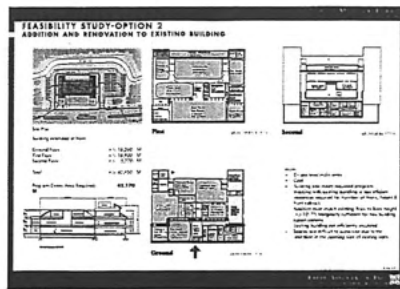
Option 1: Renovation of the Existing Building



- This scheme calls for the removal of the front landscaped knoll to provide a grade level with the main entrance off Concord Avenue, and the enlargement of the elevator and toilet facilities as well as rearrangement of stack areas to accommodate handicapped requirements.
- All mechanical systems need to be replaced.
- The entire space of the existing building has been examined and redesigned in light of the expanded building program.

It became clear at that time that Option 1 was not a feasible option for several reasons. First, the existing building was already too small to accommodate the existing program, it did not fulfil the requirements of the new, expanded program. Additionally, the renovations themselves would further reduce program areas. This option was considered infeasible.

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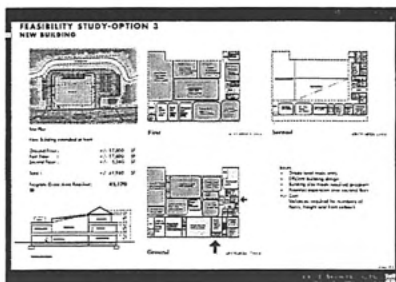
Option 2: Renovation of the Existing Building with a Major Addition

- All systems, including mechanical, ventilation, air-conditioning, electrical, and plumbing must be replaced. Existing floor-to-floor heights prevent replacement with a single modern integrated system; numerous systems must be replaced.
- Seismic code restricts methods of adding to the original building (prohibitively expensive to bring the original building up to current seismic code) such that building additions must be structurally separate. This further restricts and divides program space to become even harder to use (e.g., like the division of the fiction collection today between old and current).
- Per the Massachusetts Architectural Access Board (MAAB) Regulations and the Americans with Disabilities Act (ADA), with expansion costs in excess of 30% of the full and fair cash value of the existing building, the entire building must be made fully accessible, including stack areas and new adult and children's toilets.
- Any additional expansion possibilities in the future would also be severely restricted without eliminating parking areas or encroaching upon the riverfront areas.

For these reasons and others the design team, including the architects, Trustees, Library Director and representatives chose not to explore the renovation and addition options further.

Option 3: New Building on the same site

- This option would be designed within all current building, structural, seismic, life-safety and handicapped codes.
- It would be designed to meet all current structural-loading capacities for maximum flexibility and use as a library building.
- Floor-to-floor heights would be designed to accommodate complete and efficient building, mechanical, electrical and fire suppression systems.
- All of the interior spaces could be designed with a particular eye toward open areas that could be supervised by the minimum number of staff.



This option also has the advantage of being designed from the ground up to meet the needs of the library as outline in the Building Program for the next twenty years and more. Future expansion could be accommodated by structuring the building to expand the upper level over the main level area.

Although the conclusion of the investigation was that Options 2 & 3 were feasible, it was clear that Option 3 was the Preferred Design Alternative. This Alternative was then analyzed and refined to derive the final Schematic Design that is represented in the section, "Preferred Alternative."

COSTS

Daedalus Projects Inc., a professional independent cost estimator, provided construction cost estimating services. Total Project Costs for Option 1 were estimated at approximately \$5.2 million, not including provisions for any new furnishings and with a one-year escalation factor of 4.5%. Of that, approximately \$3 million would be needed immediately to cover serious problems.

Total Project Costs, including Construction Costs, Project Expenses, Furnishings and an escalation factor of 4.5% compounded for two years for Option 2 were estimated at approximately \$10.4 million.

Total Project Cost for Option 3, including Construction Costs, Project Expenses, and Furnishings was estimated to be approximately \$12,078,268, or about \$288 per square foot. This cost is well within industry averages for new construction of this building type, design and location. This cost also includes an escalation factor of 4.50% per year compounded for two years.

CONCLUSIONS

Based on the review of the existing conditions, analysis of the building program and exploration of design alternatives, we find that, within the budget indicated and the existing site as described, it is feasible to expand the Belmont Memorial Library to accommodate the 20 year projected needs of the citizens of Belmont for library services.

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However, the unique construction and configuration of the existing library building does not lend itself to either a major renovation or renovation and addition. It is our conclusion that a new structure with the integrated modern building systems required and architecturally compatible with the neighborhood will yield a library facility capable of meeting the needs and inspiring the imaginations of Belmont residents and visitors, now and for the anticipated future.

“WHAT IF WE DO NOTHING?”

- All major operating systems have reached the end of their useful life
- Handicapped Accessibility problems exist throughout the building
- Belmont would not likely receive MBLC grant funds for work which does not meet guidelines for growth
- Inflation will raise costs for major repairs

Garcia Galeska DeSousa, the consulting engineer for Tappé Associates, has identified that the building's mechanical systems have reached the end of their expected life. We have observed that when air conditioning units were added to the roof, the existing structure was not adequate for the load; this has contributed to the roof sag and water leakage issues in the building since their installation in the early 1970's. This damage will continue until possible failure if action is not taken to replace the systems and the roof and supplement the roof structure soon.

The electrical system should be fully upgraded for technology. When the building was designed in 1964, there was no concept of the amount of technological hardware required in a library of the Twenty-First Century in terms of both power and data wiring.

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The main level and mezzanine are virtually inaccessible for handi-capped patrons and citizens. The elevator is much too small for current handicapped codes and limits access to both these levels. Rest rooms are not accessible with the exception of one unisex toilet on the lower level. The main entrance although familiar and impressive is completely inaccessible, from its steep slopes and steps up to its undersized vestibule and manual doors.

The building has no fire suppression system. It does not meet current codes for structural loading capacities for library buildings or current seismic codes. The building does contain asbestos finishes and insulation. Although not a risk at this time, a major renovation would require the abatement of this material.

In total, the cost to maintain the Belmont Memorial Library will continue to escalate. The cost to bring the building into handicapped code compliance, replace and restructure the roof, abate the hazardous materials and replace outdated building systems will be well over three million dollars in 2001 and more in later years.

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EXISTING CONDITIONS



Locus Map



Site Map

LOCATION

The library is centrally located within Belmont just one quarter mile from Belmont Center on Concord Avenue, a main thoroughfare which runs directly into Harvard Square in Cambridge, Massachusetts. The location is accessible by main bus routes and is one block from the MBTA Commuter Rail. The public high school is approximately two blocks down Concord Avenue to the east and the library is about one half mile from the middle school. Although the building is a short five minute walk from the town center and retail district, it is bounded by a major residential area on the west and south and directly to the east is a public swimming pool and recreation area, making the library extremely convenient for pedestrian foot traffic.

SITE

Prior to the Belmont Memorial Library being constructed in 1965, the site on Concord Avenue was distinguished by the Wellington Brook running in a serpentine manner through it, and entering a large underground culvert at the east boundary which runs below the park and recreation property. When the library was constructed, the land was filled and the brook was redirected into an open concrete and granite culvert that runs along the rear portion of the library property. The existing building sits just to the east of the center of the site with an asphalt drive and parking areas surrounding it. The vehicular entrance is on the west side of the building with the majority of the parking (25 spaces) on this side. The one-way drive continues around the building with 9 parking spaces directly behind the building on the south and another 10 spaces on the east side. On both the west and east sides, the vehicular travel lanes are between the parking spaces and the building. A concrete sidewalk surrounds the building. The parking lots have no underground drainage structures, but have breaks in the asphalt curb which drain storm water runoff directly onto the ground and over to the brook culvert. The parking configuration has remained virtually unchanged since its construction with the exception of some restriping to indicate designated handicap spaces on the west side.

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**Rear Parking/
Facade**



**Lower Level West Entrance
at Parking**



**Parking at
Wild Flower Garden**

The west portion of the site between the parking lot and property line has been planted and maintained by the Belmont Garden Club. Their effort provides a wonderful and colorful wildflower garden and walk with benches and very nicely landscaped areas for relaxing and contemplation. Because the grade of this portion of the site is 4 – 5 feet below the level of Concord Avenue, the space, although close to the street, seems nicely separated from it.



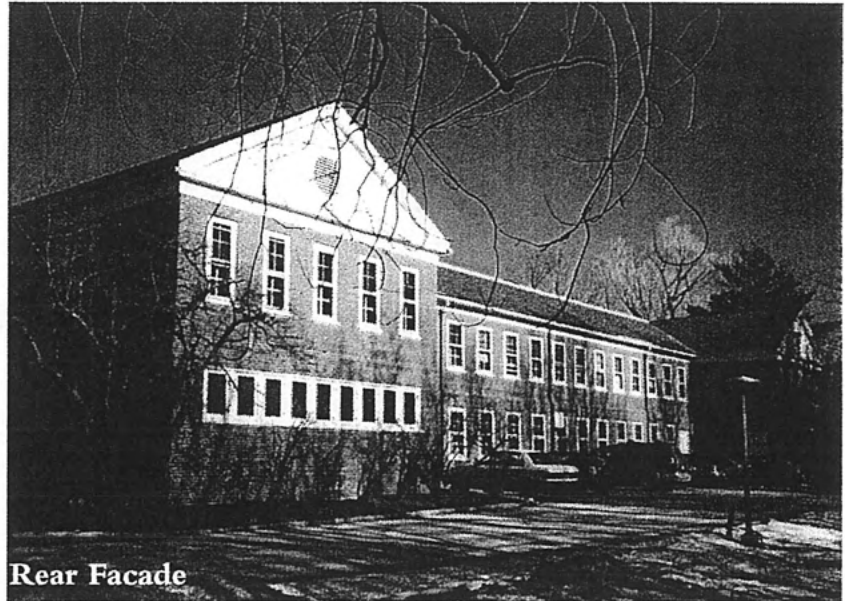
The main building entrance fronts onto Concord Avenue. The original and existing site grading provides a symmetrical sloped entrance knoll up to the central entrance, incorporating the Memorial Steps and flagpole in the center. This knoll rises about 7 – 8 feet and has concrete sidewalks on either side. The composition is stately and formal in appearance and is befitting of such a public building but is completely inaccessible to the handicapped patron.

On the west side of the building, there is an accessible entrance into the lower level. Also on this side, the library has located their exterior book and video drop boxes.

The library is located in a SR-C zone. This establishes zoning setback guidelines of ten feet from each side property line, thirty feet from the rear property line and twenty five feet from the front property line.

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Well established landscape surrounds the building; the trees in front of the building frame it wonderfully, fitting in with the landscaping along Concord Avenue. The foundation plantings around the buildings are somewhat overgrown, unfairly obscuring the building in some cases, but in generally well kept condition.



Rear Facade

BUILDING EXTERIOR

General

The library building, opened in 1965, is a colonial style designed by Kilham, Hopkins, Greenley Architects. Exterior materials include brick masonry and poured in place concrete with a slate roof and wood double hung windows. The front façade is symmetrical and dominated by three wood pedimented forms, the center one being the main entrance to the main floor with the pediment supported by six Doric columns. The building is organized on two major floor levels and an upper level mezzanine.



Entrance

The building has been very well maintained over the years both on the exterior and interior, however many of the systems are at the end of their reasonable lifespan.



Non-accessible Entrance

Entry

As noted above, the main front entry is on the upper level and in the center of the building. It is reached by either symmetrical ramps up a non-accessible slope, or up the Memorial Steps. There are additional exterior steps at this point up to the formal portico and main door. None of this entry sequence complies with the Americans with Disabilities Act (ADA) or the Massachusetts Architectural Access Board (MAAB) regulations at this time.

Wheelchair accessible entrance to the building is achieved via entrances on the lower level, one on either side of the building. The entrance on the west side is in close proximity to the majority of parking and the Children's Library on the lower level. This is the entry which is used most often by the majority of patrons. The entrance on the east side of the building is adjacent to a smaller parking area and the large meeting room, also on the lower level. It is virtually impossible to secure and/or monitor these entrances at all.

There are two delivery entrances. The first, adjacent to the west side entry on the lower level, is into the maintenance areas and is used by the maintenance staff only for deliveries of supplies and trash removal. The second is in the rear on the south side of the building and is used by the staff for book deliveries into the technical services area and by the Friends and public for drop off and storage of books for the annual book sale. Both of these entrances are at grade.

Roof

The original slate portions of the roof appear to be in generally good condition as are the areas of copper flashing. There is no evidence of extensive water damage to interior finishes (at these areas).

Gutters and downspouts are mostly still serviceable and have been well maintained, but are nearing the end of their useful life expectancy.

The area of major concern on the roof is the flat roof portion in the center of the building. In 1972, air conditioning systems were added to the building and a number of condensing units were located on this flat portion of the roof. The units were too heavy for the existing roof structure and this has caused a negative roof

slope, poor drainage and ponding in some areas, especially around four existing roof skylights. Although there is no danger of the structure failing, the library has lived with the roof slope problem since the units were installed, patching leaks as they happen on a periodic basis.

Masonry

The brickwork is a standard red brick and appears to be in good condition.

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Memorial Wall
at Lobby



Memorial Lobby Looking
Towards Reference Desk

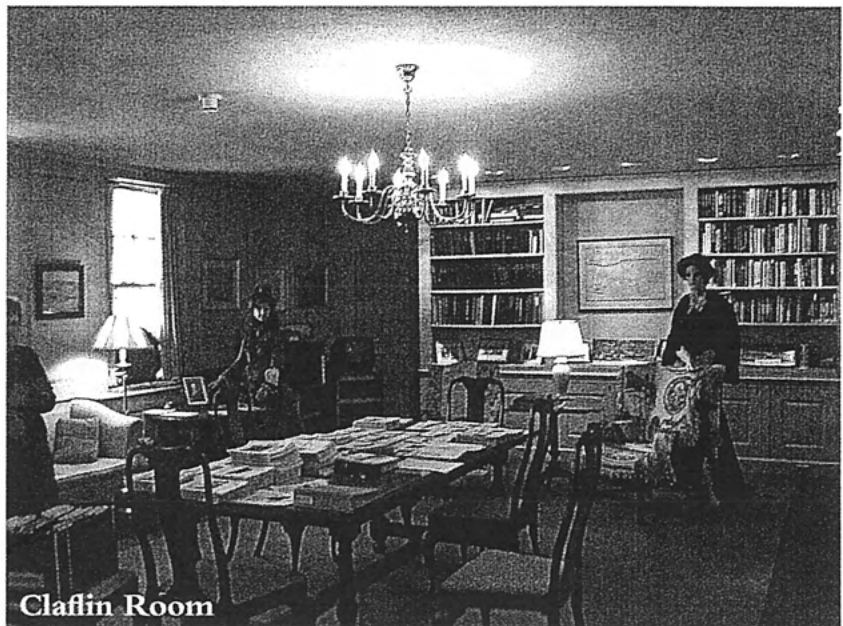


Reference Room
Looking West

BUILDING INTERIOR

Main Level

The main level of the library is entered centrally through a vestibule into the Memorial Lobby area which is trimmed with granite molding and columns and has a barrel vaulted ceiling. Set into a recess in the wall to the right are marble War Memorial Plaques commemorating the veterans lost in the major wars of the Twentieth Century. Across from these is the main circulation desk area. The administrative areas, workspace areas, administrative assistant and director's office are located behind the circulation desk. Moving forward, a main circulation spine, open to a mezzanine level above runs perpendicular to the lobby and contains the majority of the adult audio / video collection. There are a number of framed openings between the main spine and the reference room which have been filled in with shelving that contributes to a general closed in feeling. Many comment they



Claffin Room

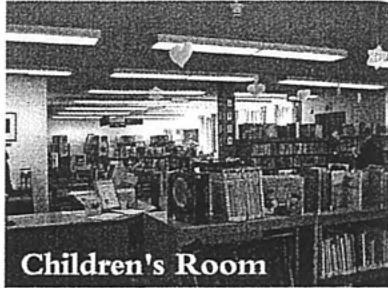
did not realize that the mezzanine level existed, due in part to poor lighting and vertical connection. To the right, behind the Memorial plaques and off the main spine, are Men and Women's toilets. Further on this side is the Claffin Room. Organized and run by the Belmont Historical Society, the Claffin Room houses

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the major portion of the historic documentation and materials for the town. Straight ahead, the reference desk and room take up most of the rear central portion of the building, with a separate Young Adult area to the right, physically and acoustically separated from the reference room by a half glass wall and a pair of doors. The main stack area is to the left of the lobby in the east wing of the building and contains non-fiction and back periodical stacks. The west wing, to the right of the main lobby contains the current periodicals and the popular fiction and non-fiction collections. The mezzanine is accessed by two stairways at either end and contains the bulk of the fiction collection and a small area, separated by a glass wall, for special collections.

The library has been very well maintained. The windows are mostly wood double-hung and are in good to serviceable condition. Finishes throughout are in fairly good shape. There are areas of 9 x 9" vinyl tile throughout the building which are suspected of containing asbestos material. Although worn, these areas are not in danger of contaminating the building at this time. There are a series of skylights in the central portion of the mezzanine ceiling which are serviceable, but have leaked from time to time, due to the weight of the air condensers on the roof.



Lower Level

The lower level is bisected lengthwise by a corridor which connects two entrances at the west and east sides. On the front, north side is the Flett conference room, the main mechanical areas, storage, a unisex handicapped accessible toilet, staff lounge, staff toilet and lockers, kitchen and large meeting room adjacent to the east entry. The Children's Library occupies about a quarter of the lower floor on the rear southwest corner. It is directly adjacent to the lower entrance at the main parking area on the west end. Moving westward, there is a combination storage / office / work area for the children's library staff followed by technical services with a delivery / Friends storage area.

The lower level is also in very good condition. There is vinyl asbestos tile in many areas, again worn, but in overall good shape. The wood windows are also in good shape. In the children's library there are beautiful and charming stained glass sashes in the stack areas.

GENERAL SYSTEMS

HVAC

The building has various systems throughout for heating ventilation and air conditioning. The main original ventilating system has been reported by the maintenance engineer to be inoperable. The lower level in the Children's Library, Flett Conference Room and technical services area, is served on the perimeter by unit ventilators. The large conference room has a combination system of unit ventilators and an air handling unit for air conditioning in a back closet. The main level is served by separate systems of condensing units and air handlers in concrete areaways on the north side, air handling units in the attic and condensers on the roof. All of these systems are well past the end of their useful lifespan and are in need of replacement. The condensers on the roof are failing the structure to the point of affecting the roof drainage. See the detailed consultants report for more information.

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Structural

The detailed Structural Report records that the building is sound. The original drawings indicate that the lower level of the building is a pre-stressed concrete slab system with a live load capacity of 125 pounds per square foot; the main and mezzanine level are both an open web steel joist system with a capacity of 100 pounds per square foot. None of the floors are at the current code capacity of 150 pounds per square foot. The lower level pre-stressed slab would make the insertion of any new structural elements difficult and very expensive.



Lighting

Lighting throughout has been well maintained and is original for the most part. There are large pendant globes in the main floor / mezzanine area which are very difficult to maintain due to their weight and height above the main floor.

Flooring

Most areas of the main floor of the library are carpeted. The material is generally at or beyond its life expectancy and in need of replacement.

Vinyl Asbestos Tiles are used on throughout the building and are showing signs of wear (see Hazardous Materials report).



The toilet areas have ceramic tile.

Egress Stairs

There are no code compliant egress stairs. In general, guardrails and handrails on all stairs do not meet current code requirements.

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ACCESS

There are numerous areas of the Library that do not comply with the requirements of the ADA and MAAB. They include but are not necessarily limited to:

- Main Level Entrance - Not compliant
- Main Level Vestibule - Not compliant
- Toilets - Layout of lower level is apparently compliant. Children's toilet rooms are not compliant, but an attempt has been made to make the toilet in the lower hall accessible, although the door swings in the wrong *ey* direction.
- Bookstacks - Many of the stacks end in "dead-end" aisles and do not have the 5'-0" turning radius that would be required. Some of the bookstacks do not have the required 3'-0" clearance between stacks. Some of the end-of-range conditions do not provide the required 4'-0" clearance.
- Elevator - The elevator is much too small to meet current handicap or building codes.

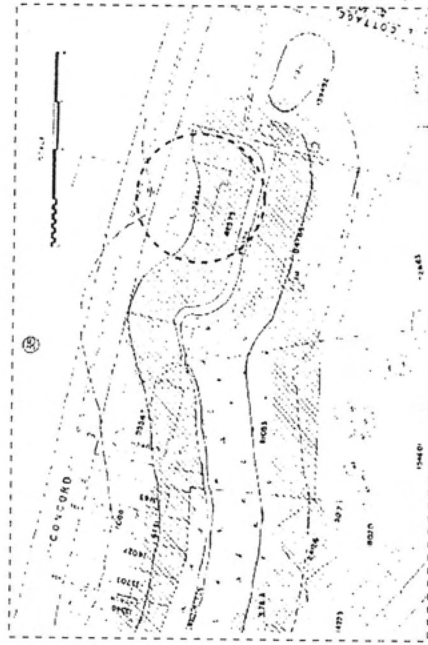
There are various other minor areas of non-compliance throughout the building. During the course of a comprehensive renovation / expansion project option much of the interior configuration would be altered and the proposed new arrangements would be designed to be in compliance, therefore we will not attempt to itemize each of these.

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EXISTING SITE



FLOOD PLAIN MAP



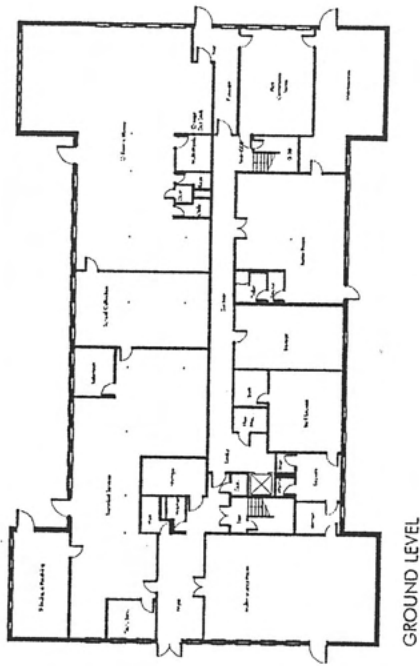
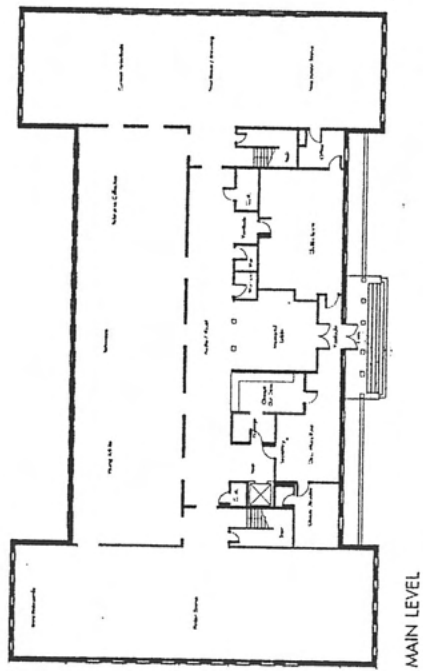
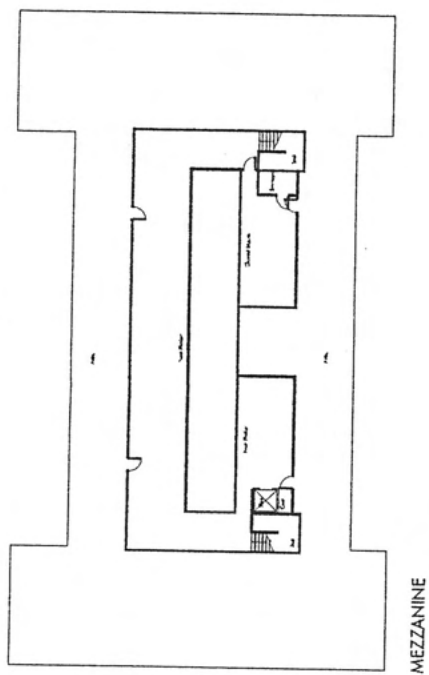
WETLANDS MAP

12 July 2008

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EXISTING FLOOR PLANS

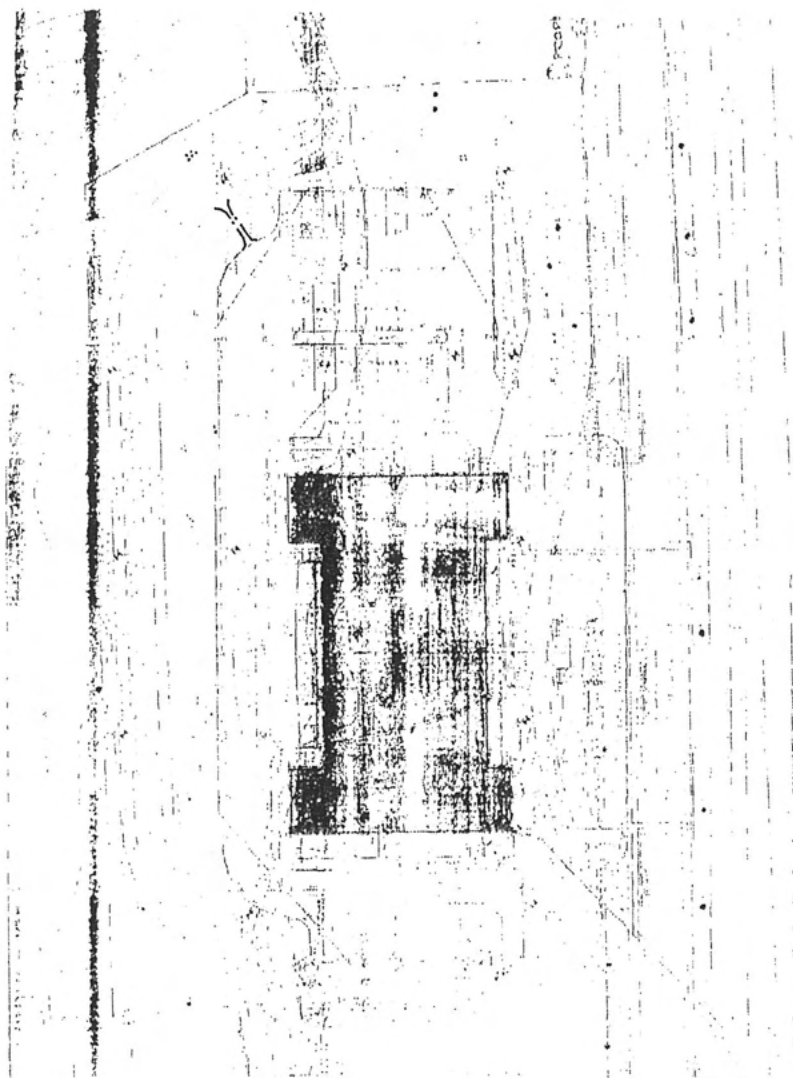


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PLANNING & DESIGN

Program Review

Prior to the start of this study, the Belmont Memorial Library produced a program document, entitled "Preliminary Summary of Space Needs - Library Building Program Workbook - MBLC." The first step in Tappé Associates Inc. library design process included a review and analysis of this library program document. The purpose of this analysis was to establish a joint understanding between the design team and the Library Director and staff of the intended goals for the expanded facility.

This process consisted of the following steps:

- Review of existing program text and charts
- Creation of sketch layouts for each individual program area
- Review of sketch layouts with library staff
- Creation of a revised program summary chart

Initial review of the existing program generated a series of questions and comments based on Tappé experience with other libraries. These were reviewed with this Library's Director, Trustees and staff. Nationally recognized library planning standards were used as basis for evaluation together with quantitative and graphic analysis of all program areas. The purpose of this review was to confirm the overall space requirements of the library projected for the next 20 years.

The sketch layouts of the various individual program elements were created as a graphic check of the program quantities. From these sketches, which show all the proposed furnishings, both the design team and the library could see whether the departments have sufficient square footage to accommodate the proposed holdings of the library. The sketches also served as an initial opportunity to explore intradepartmental adjacencies and furniture arrangements. These sketches were reviewed with the library and the library comments integrated thereafter.

PROGRAM AREAS

The original Library Building Program was considered by all to be a preliminary guide for the development of the final program. It identified from 27,028 to 32,329 square feet of net program space using a 77% efficiency factor for non-program space for totals of 35,136 and 42,998 sf respectfully. From the information garnered via the program review and updated sketches comes the program summary chart that the design team used in the development of the Initial Conceptual Options discussed below. Although individual program areas change, most of the areas were not significantly different enough to mandate a change in the overall area allocation. The change in total program area is approximately 2,194 square feet to 34,523 and maintains an efficiency factor of 77% for a total gross square footage of 45,060. The most significant increase is found in the Lobby areas to incorporate the War Memorial, the Circulation and Adult Services areas.

NON-PROGRAM AREAS

The chart shows a total for the programmed areas of the library and also includes an allowance for “non-programmed” areas, including:

- Mechanical equipment rooms and shafts
- Elevator shafts and machine rooms
- Two separate code-compliant egress stairs
- Supplemental stairs
- Toilet and janitorial facilities
- Building structure, interior envelope and interior partitions
- Circulation space between program elements

Our program summary is included on the chart on the following page, and shows an overall gross square footage recommendation of 45,060 square feet.

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AREA COMPARISONS

Belmont Memorial Library Feasibility Study
Building Program Review

Space Designation	Programmed Area	Designed Area
Entrance/Vestibule	200	420
Main Lobby	700	720
Gallery		
Quick Area / Cafe	200	165
Circulation Desk	232	320
Checkin/Delivery Area	320	530
Circulation Work Area	372	512
Circulation Librarian's	120	127
Drive-thru		
New Books	1077	1230
Audio/Video Collection	742	819
Adult Fiction Stack	1240	1550
Adult Non-fiction Stack	3285	4200
Periodicals - Current	1052	870
Large Print	330	530
Paperback books	180	180
Periodicals - Storage	700	950
Reference Room/Adult	2700	2550
Young Adult Room	1516	1370
Local History / Clafflin	750	873
Computer Lab	650	617
Study Rooms	250	250
Reference Work Room	520	535
Coordinator of Public	180	123
Children's Service Desk	434	345
Children's Staff	600	565
Children's Storage	100	100

DRAFT

Belmont Memorial Library Belmont, MA



March 2001

FEASIBILITY STUDY

AREA COMPARISONS

Belmont Memorial Library Feasibility Study

Building Program Review

Space Designation	Programmed Area	Designed Area
Children's Service:	180	172
Children's Picture Boo	1000	976
Children's Study Are:	2200	2000
Children's Periodical	30	50
Children's Listenin	160	172
Juvenile Audio Visua	428	490
Juvenile Reference Are	65	124
Juvenile Fict, Non Fict	2014	1900
Story Hour & Craf	1008	1085
Children's Toile	150	109
Director's Office	242	242
Assistant Director's	180	180
Administration Office	275	330
Delivery	180	220
Serials/Magazine:	120	160
Acquisitions/Catalogin	120	160
Book Processing	200	260
Data-Entry A/YA	120	160
Data-Entry Juvenil	120	160
Coordinator	180	180
Tech Services Stora	100	150
Trustees / Conferenc	329	348
Large Meeting Room	1440	1424
Kitchenette	120	120
Conference Room	520	640
Staff Room	450	490
Custodian's Office Are	132	145

DRAFT

Belmont Memorial Library Belmont, MA



March 2001

FEASIBILITY STUDY

AREA COMPARISONS

Belmont Memorial Library Feasibility Study

Building Program Review

Space Designation	Programmed Area	Designed Area
Custodial Maintain.	284	275
Trash Room	150	150
Boiler/Mechanica	Non Prog.	Non Prog.
Technology Office	200	208
LAN Closet	72	40
Friends Book Sorting	460	450
Utility Broom Closet	150	52
Library Material	500	450
Total Programmed	32,329	34,523
Non Programmed	9,867	10,537
Gross Square Footage	42,196	45,060
Net to Gross Ratio	77%	77%

Preliminary Design Alternatives

NARRATIVE DESCRIPTION

CONCEPTUAL PRELIMINARY DIAGRAMS

- Preliminary Site Options

- Adjacency Diagrams (13 June 2000)

- Building Footprint Options (12 July 2000)

- Building Options (12 July 2000)

- Feasibility Study Options (22 August 2000)

 - Cost Estimates (30 August 2000)

 - Renovation/Addition

 - New Building - Basic Materials

 - New Building - Similar Materials to Existing

 - Cost Estimate Breakdown (7 September 2000)

- Feasibility Study Site Options (30 August 2000)

- Design Sketches (August-December 2000)

From the Program Review we understood that the new required size for expanded library service for the Town of Belmont for the next 20 years, as required by the Massachusetts Board of Library Commissioners for the application of a construction grant as well as future accreditation, was approximately 42,000 square feet. From the existing conditions analysis we determined that the existing building was approximately 28,000 square feet.

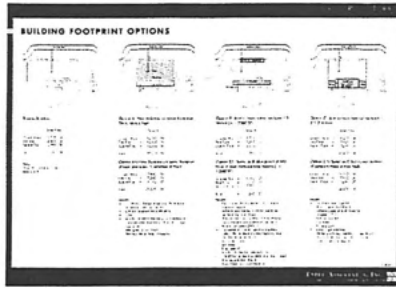
It was clear from the Needs Assessment that the library was clearly in the correct location within the Town. It is centrally located, close to schools, the town center, residential districts and mass transportation. As the Town of Belmont is landlocked between adjacent towns and fully developed, it was also made clear that there was really no other location available in the town for a new building and parking for expanded library services. It was the clear determination to explore the existing property for expanded library services for the Town of Belmont.

With the consideration of the property, the options of expansion were:

- Renovate the existing facility and review to determine if the existing facility could accommodate the required expanded program
- Renovate the existing facility and provide an addition to accommodate the expanded program
- Demolish the existing building and build a new building to accommodate the required expanded program

Early in the design process it was determined that there were two distinct paths that would have to be developed simultaneously. The first path consisted of the site issues of constrained property limits, parking, zoning and the rivers protection act. The second was the development of the plan diagrams as defined by the program and in concert with discussions with the Director, Trustees and library staff.

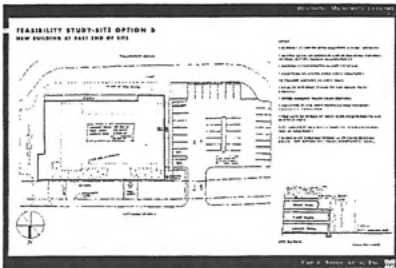
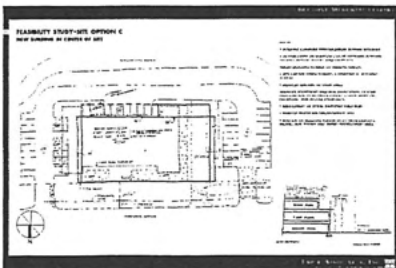
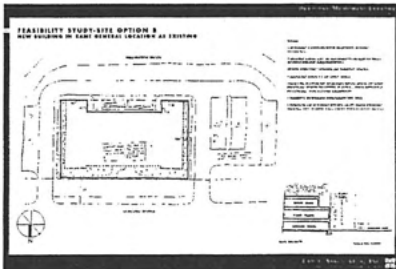
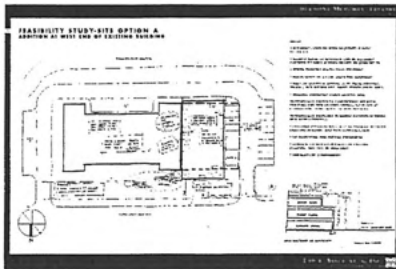
FEASIBILITY STUDY



SITE ISSUES

Tappé Associates developed a number of site options, which began to illustrate the site design constraints early. These looked at the pros and cons of variations of the three expansion options and can be found following this narrative.

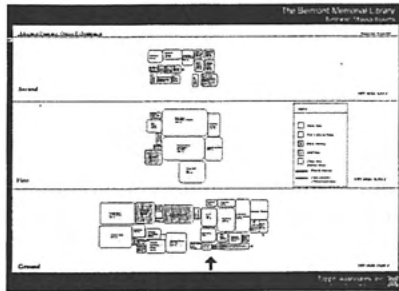
There were a number of assumptions that were made and reviewed with representatives of the Town and the Conservation Commission at a number of informal informational meetings. Although the general feeling was to add to the building towards the front, away from the Wellington Brook, it was also assumed that this was a “pre-disturbed” site relative to the Rivers Protection Act. This, simply put, meant that as long as the new development did not make site run-off conditions any worse than existing conditions, that development would be considered the best management practice for the development. Throughout the design process, the designers held the line of the existing asphalt pavement as a boundary that determined the limit of the pre-disturbed area. In addition, it was always a condition that the site run-off would be improved as a condition of the overall project design. The first site options show development toward Concord Avenue, away from the brook. These are labeled “Building Footprint Options A, B, and C” and dated 12 July 2000.



After review of a number of building design options, the design team, including the architects, designers, Library Director and Trustees, met with representatives of the Belmont Planning Board. At that meeting it was implied that any expansion options on the site should comply with the existing zoning regulations. These mandated a minimum twenty-five foot setback from the front property line and height restrictions of thirty-six feet high at that setback line. The zoning further allowed a one-foot increase in height for every additional foot in distance from a ten-foot setback from the original setback. For example, 37 feet high would be allowed at 36 feet back from the property line. It was determined after this meeting that the expansion could be designed to be within these guidelines. A number of options was illustrated and reviewed with these guidelines. These are labeled “Feasibility Study - Site Options A, B, C and D” and dated 30 August 2000.

BUILDING DESIGN ISSUES

During the program review process, Tappé Associates began to review the adjacencies of all of the program spaces to determine the optimum program layout for the library. The original diagrams were labeled Adjacency Options A, B, C, and D and dated 13 June 2000.

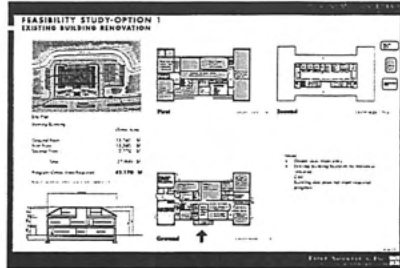


The main factor influencing the design at the beginning was the desire by all of the various library departments to be on the first level. Unfortunately the site would not allow a single floor layout. The paradox was that the site mandated a three level design regardless of the option chosen. After review of the diagrams, a preferred adjacently "Option E" dated 15 June 2000 was approved as the most desirable layout. This diagram placed the Children's Library, Circulation Areas, Major Meeting Room and Building Mechanical/Maintenance spaces on the ground level; the main Adult Services and Stacks including the Young Adult Area, Periodical and Reference Areas and Computer Lab on the main level; and the Administrative, Staff and Technical Services areas on the uppermost level. The diagram also shows the Claffin Historical Room and Conference Room on this level. In the final diagram these spaces were moved down to the main level, essentially creating a staff only level on the upper floor. This was considered a positive move, keeping all public spaces on two levels.

From these adjacency diagrams, various Building Options were developed. These included one which explored the renovation of the existing building only, with the removal of the landscaped knoll in front to gain grade level access at a new main entrance; two options for a renovation with a major addition to the front of the original building; and two which explored a new building in place of the existing building. These are labeled and dated 12 July 2000 through 7 August 2000.

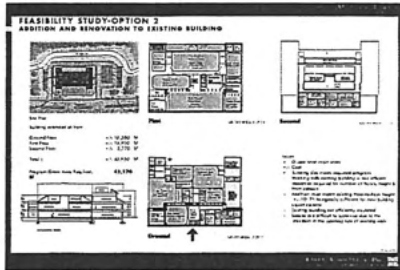
Coupled with the site issues, these options were further explored in the diagrams labeled "Feasibility Study - Option 1, 2, and 3" and dated 22 August 2000.

FEASIBILITY STUDY



Option 1

It became clear at that time that Option 1, which examined the renovation of the existing building for the expanded program was not a feasible option because it did not fulfil the requirements of the new program. Further, although the scheme called for the removal of the front landscaped knoll for the provision of a grade level main entrance, enlargement of the elevator and toilet facilities as well as rearrangement of stack areas to accommodate handicapped requirements, these renovations themselves would further reduce program areas. This option was eliminated.



Option 2

Option 2, the Addition and Renovation to the Existing Building, was considered a feasible, but not desirable, option. This option explored an addition to the building towards the front and Concord Avenue to avoid construction in the direction of the Wellington Brook and provided space to meet the required building program. It was not, however, the zoning or choice of location of an addition which was the major issue with the difficulty of this option, but the construction of the existing building itself.

As noted earlier, the existing floor structure capacities are not to current building code. This would severely limit the flexibility of the space for use as a library in the future. Also the Massachusetts State Building Code mandates very strict seismic requirements for additions and new buildings. Essentially, the addition must be completely structurally separate from the existing structure. The existing structure depends upon its exterior masonry walls for not only bearing, but for seismic bracing; there are strict limits on the amount of openings, expanded or new allowed in this wall. The only new openings allowed in this membrane would be the expansion of window openings to the lower level, creating walk-through openings. This situation would severely limit the visual and physical connection between various spaces in the building, create disproportionately sized spaces in an addition and be poor in terms of being able to adequately control a public library building.

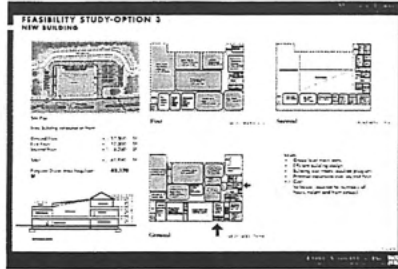
Another limitation is the existing floor-to-floor heights within the existing building. The floor-to-floor heights are approximately 10 feet 4 inches. These are very tight floor-to-floor heights; the existing finished ceilings are attached directly to the structure above with no room for sprinkler systems, electrical fixtures, additional data wiring or HVAC systems. The existing ceiling heights have been noted to already be restricting and low, particularly on the lower level. Any new addition would, unfortunately, have to meet these already restricting floor-to-floor heights.

Another issue related to the floor-to-floor heights is the limitations imposed by the existing building mechanical systems. As noted in the existing conditions reports, all the systems have reached the end of their reasonable lifespan and should be replaced. Due to the height restrictions, the systems on the lower level are on the perimeter in the form of unit ventilators; on the upper levels, the air ducts run through the attic space to feed different areas of the building. Due to these restrictions, it would be difficult to impossible to design a new integrated HVAC or fire suppression system that would include an addition and the existing building. The most economic and practical solution for a renovation and addition would be to repair the existing seven to eight systems and add yet another system for the addition. Even with this solution, accommodations would have to be made for soffit areas that would limit the ceiling height in various locations.

Any additional expansion possibilities in the future would also be severely restricted without eliminating parking areas or encroaching upon the riverfront areas.

For these reasons and others the design team, including the architects, Library Director, representatives and Trustees chose not to explore the renovation and addition option further.

FEASIBILITY STUDY



Option 3

The development of a new building on the site of the original Belmont Memorial Library was discussed in Option 3.

This option had the advantages of being designed within all current building, structural, seismic, life-safety and handicapped codes. It would be designed to meet all current structural-loading capacities for maximum flexibility and use as a library building. All of the interior spaces could be designed with a particular eye toward open areas that could be supervised by the minimum number of staff. Floor-to-floor heights could be designed to accommodate complete and efficient building, mechanical, electrical and fire suppression systems.

This option also had an advantage in that it could be designed from the ground up to meet the needs of the library as outline in the Building Program for the next twenty years and more. Future expansion could be accommodated by structuring the building to expand the upper level over the main level areas.

This was the option that was developed for the conceptual schematic design.

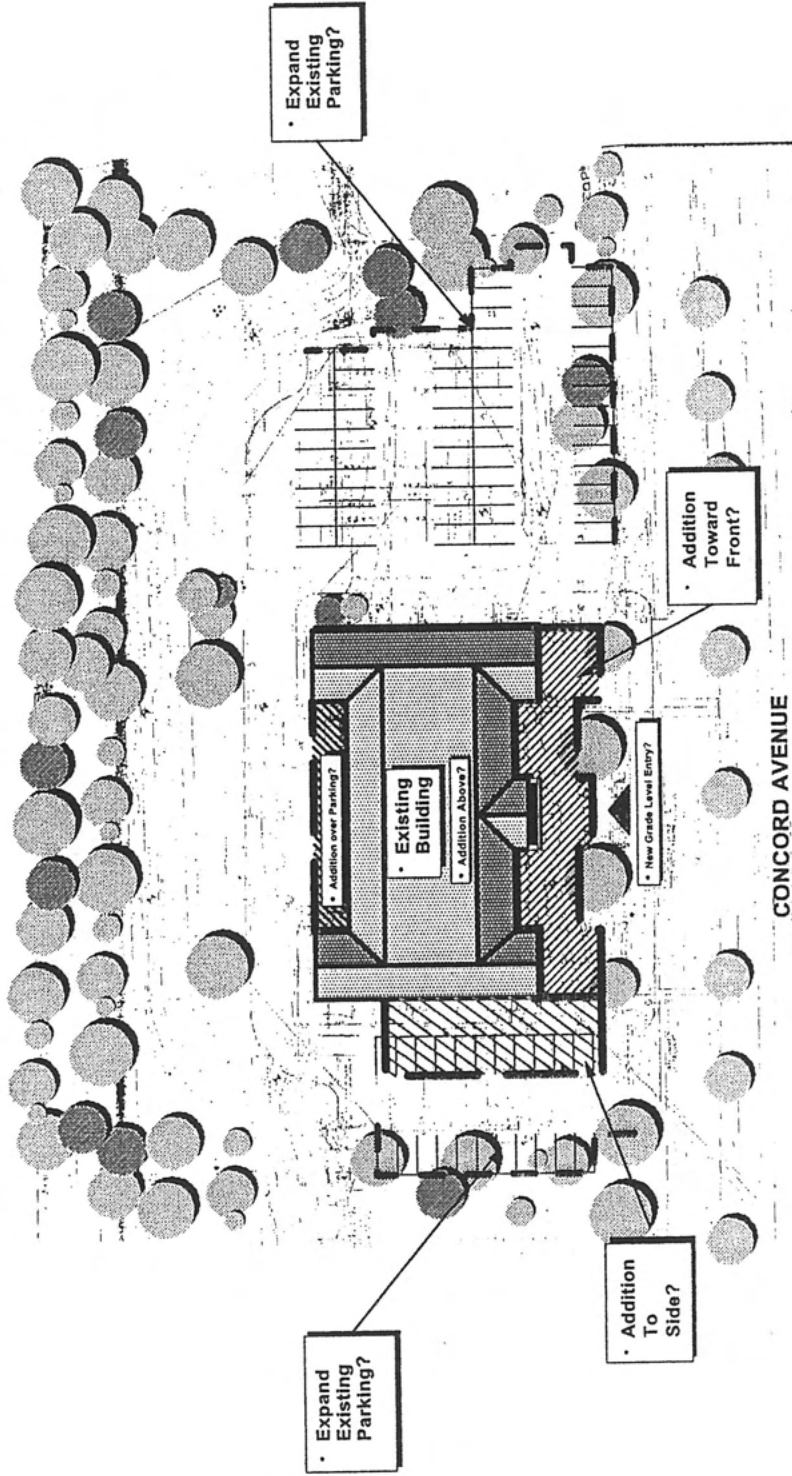
COST ESTIMATES

Daedalus Projects Inc. developed construction cost estimates for Options 2 and 3. Tappé Associates further developed these into Total Preliminary Project Cost Estimates. In addition, estimates were prepared for Option 3 using basic materials and higher quality materials such as slate roofing and high quality windows similar to those in the existing building. These estimates are included and dated 6 September 2000. The cost for renovation was developed and reviewed as well and is included and dated 8 February 2001.

The Preferred Alternative for the expansion of Library Services for the Town of Belmont at the Belmont Memorial Library was clearly a further development of the new construction as preliminarily developed in Option 3 and in the site diagram, Option D.

The Belmont Memorial Library Belmont, Massachusetts

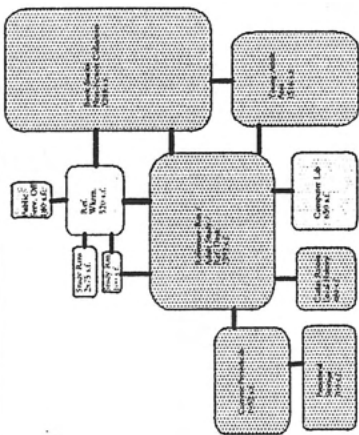
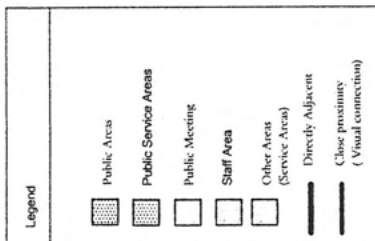
PRELIMINARY SITE OPTIONS



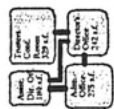
The Belmont Memorial Library Belmont, Massachusetts

Adjacency Diagrams Adjacency Diagrams: As Per Program

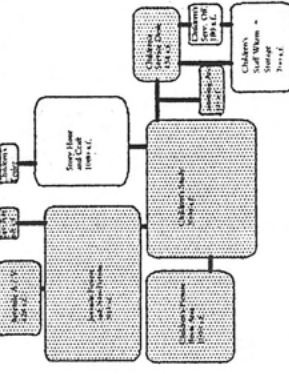
Release Date: 13 June 2000



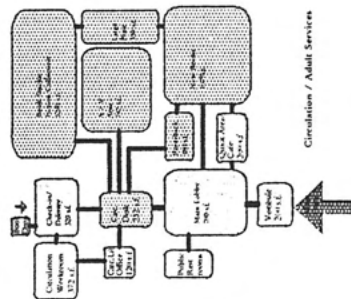
Reference / Adult Services



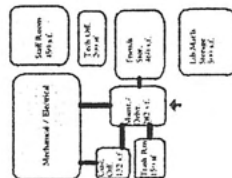
Administrative Services



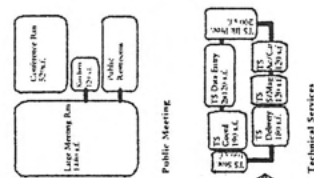
Children's Services



Circulation / Adult Services



Building Support



Public Meeting

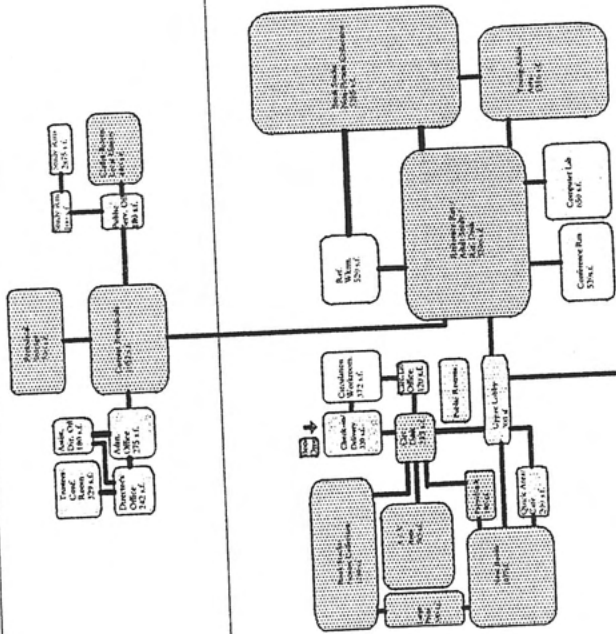
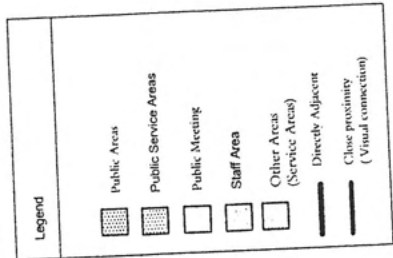
The Belmont Memorial Library Belmont, Massachusetts

Release Date: 13 June 2000

Adjacency Diagrams: Option A

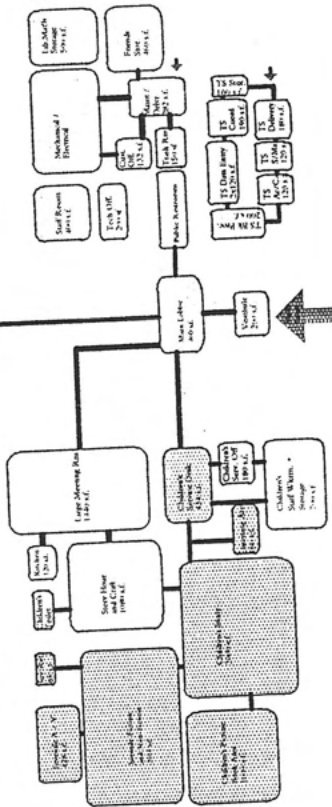
NET AREA: 3,685 sf

Second



NET AREA: 14,304 sf

First



NET AREA: 13,495 sf

Ground

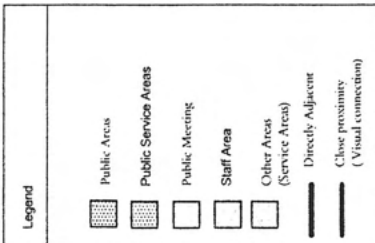
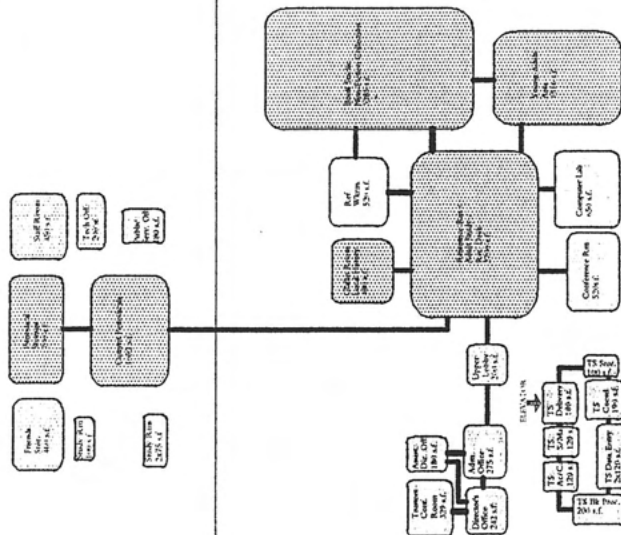
The Belmont Memorial Library Belmont, Massachusetts

Adjacency Diagrams: Option B

Release Date: 13 June 2000

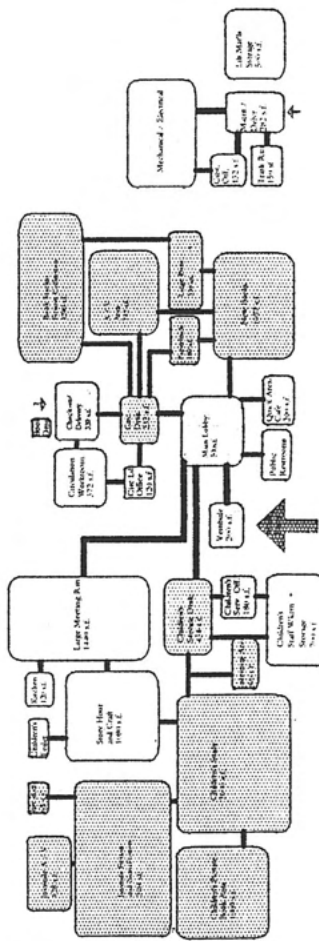
Second

NET AREA: 3,292 sf



First

NET AREA: 12,147 sf



Ground

NET AREA: 15,408 sf

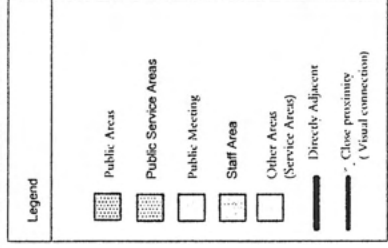
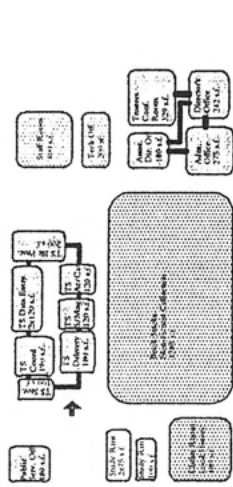
The Belmont Memorial Library Belmont, Massachusetts

Adjacency Diagrams: Option D

Release Date: 13 June 2000

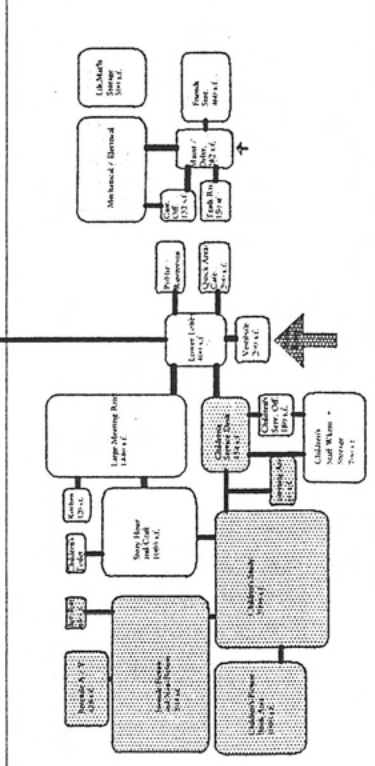
Second

NET AREA: 6,971 sf



First

NET AREA: 12,571 sf



Ground

NET AREA: 11,945 sf

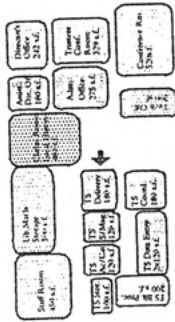
Tappé Associates, Inc.
ARCHITECTURE · PLANNING · BOSTON, MA

DRAFT

The Belmont Memorial Library Belmont, Massachusetts

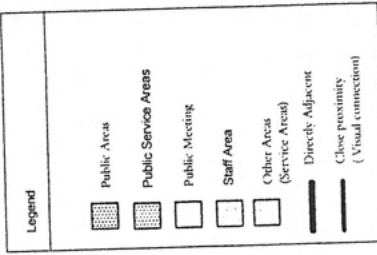
Release Date: 15 June 2000

Adjacency Diagrams: Option E (Preference)

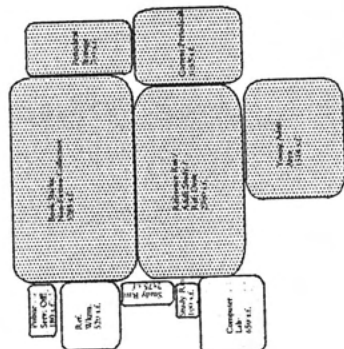


Second

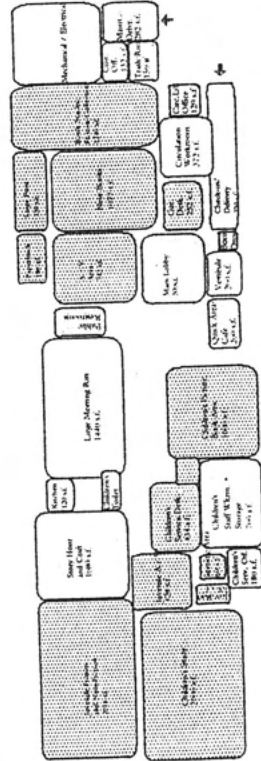
NET AREA: 4,316 sq



NET AREA: 10,853 sq



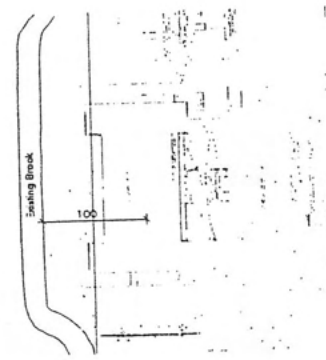
First



Ground

NET AREA: 15,698 sq

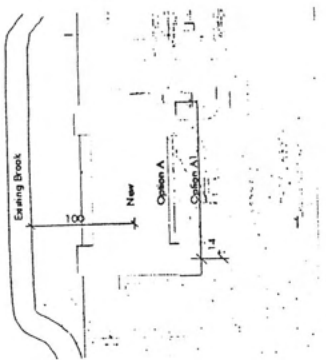
BUILDING FOOTPRINT OPTIONS



Existing Building

Gross Area	
Ground Floor	12,760 SF
First Floor	12,380 SF
Second Floor	2,770 SF
Total	27,910 SF

Note:
Gross Area is taken to outside face of exterior wall



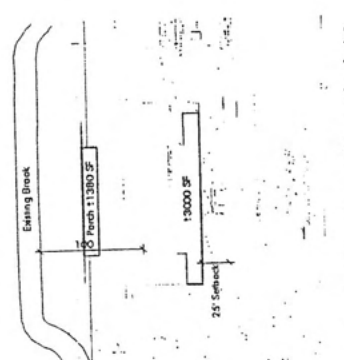
Option A: New building on same footprint/
Three stories high

Gross Area	
Ground Floor	+/- 12,500 SF
First Floor	+/- 12,500 SF
Second Floor	+/- 12,500 SF
Total	+/- 37,500 SF

Option A1: New Building on same footprint
at rear and sides > extended at front

Ground Floor	+/- 17,800 SF
First Floor	+/- 17,800 SF
Second Floor	+/- 6,360 SF
Total	+/- 41,960 SF

- Issues**
- + Height limit, if kept at same set back zoning allows for additional height
 - + Can be designed more efficient
 - +/- Cost
 - + May be looked at favorably by conservation commission because footprint is not changed (Option A)
 - + Who goes to third floor?
 - + New foundation may be required



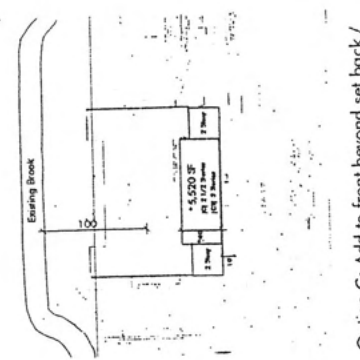
Option B: Add to front within set back / 3
Stories (+/- 3000 SF)

Gross Area	
Ground Floor	+/- 15,760 SF
First Floor	+/- 15,280 SF
Second Floor	+/- 5,770 SF
Total	+/- 36,810 SF

Option B1: Same as B plus porch at first
floor in rear (with parking below) (+/-
1,380 SF)

Ground Floor	+/- 15,760 SF
First Floor	+/- 16,760 SF
Second Floor	+/- 5,770 SF
Total	+/- 38,290 SF

- Issues**
- Exceeds height limitations (2 1/2) zoning variance required
 - Addition too narrow > limited suitability (particularly at 3rd floor)
 - Working with exg. building > less efficient than new structure (system retrofit, etc.)
 - +/- River's out? within 200ft.?
 - +/- Conservations (more impervious surface added. But additional wear could be taken directly into storm drain)
 - Lost open space
 - Lost trees
 - Flood plain?
 - Low headroom for parking below
 - + "Porch" like addition could be more arch. detail
 - Who goes to third floor?
 - Loss of light at ground level rear



Option C: Add to front beyond set back /
2 1/2 stories

Gross Area	
Ground Floor	+/- 18,280 SF
First Floor	+/- 17,900 SF
Second Floor	+/- 4,270 SF
Total	+/- 40,450 SF

Option C1: Same as C but center portion
of addition three stories high

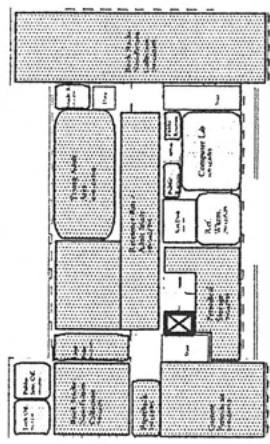
Ground Floor	+/- 18,280 SF
First Floor	+/- 17,900 SF
Second Floor	+/- 8,290 SF
Total	+/- 44,470 SF

- Issues**
- + 3rd floor "more usable"
 - + Who goes to third floor?
 - + Scheme yields enough area for program (C1)
 - Lost open space
 - Lost trees
 - Flood plain?
 - Entry at ground level
 - Working with exg. building > less efficient than new structure (system retrofit, etc.)
 - Zoning variance required

The Belmont Memorial Library Belmont, Massachusetts

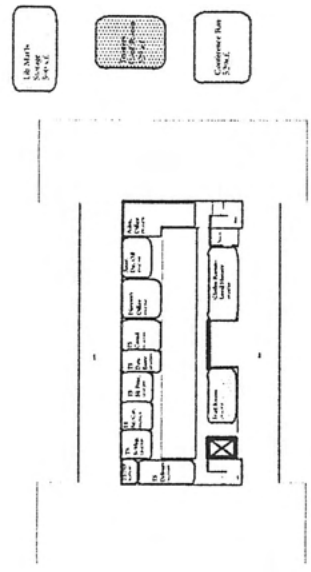
Existing Building Option

Release Date: 12 July 2000



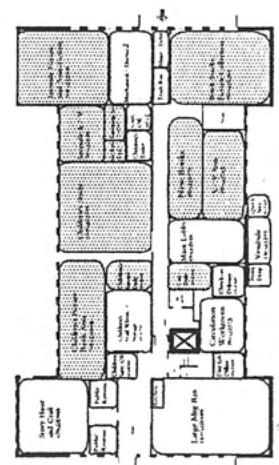
First

GROSS AREA: 12,380 sf



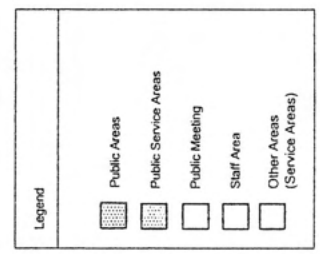
Second

GROSS AREA: 2,770 sf



Ground

GROSS AREA: 12,760 sf



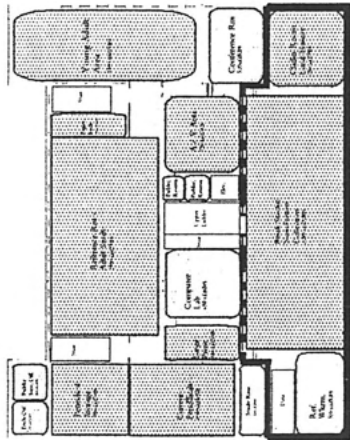
TOTAL GROSS AREA: 27,910 sf

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The Belmont Memorial Library Belmont, Massachusetts

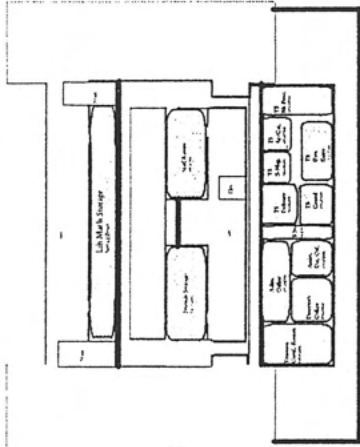
New Addition Option 1

Release Date: 12 July 2000



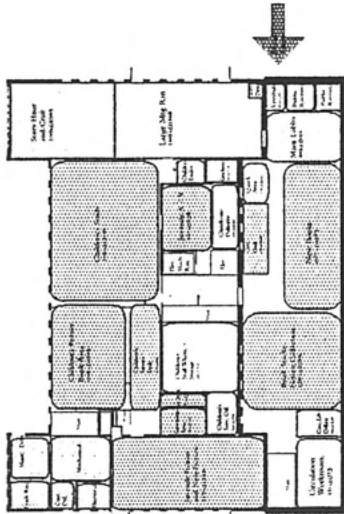
First

GROSS AREA: 17,900 sf



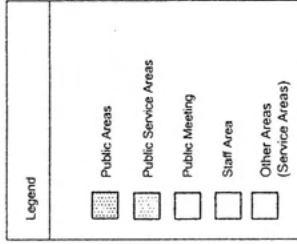
Second

GROSS AREA: 5,770 sf



Ground

GROSS AREA: 18,280 sf



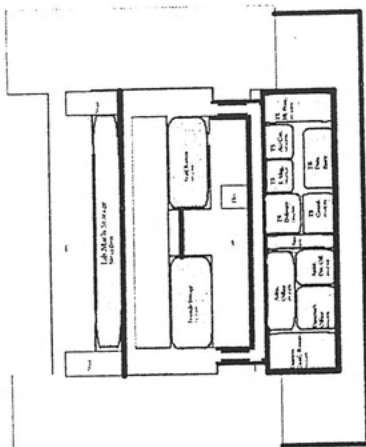
TOTAL GROSS AREA: 41,950 sf

DRAFT

The Belmont Memorial Library Belmont, Massachusetts

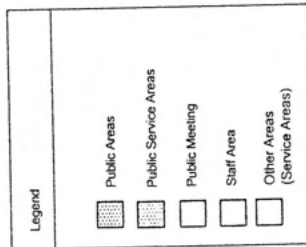
Release Date: 12 July 2000

New Addition Option 2

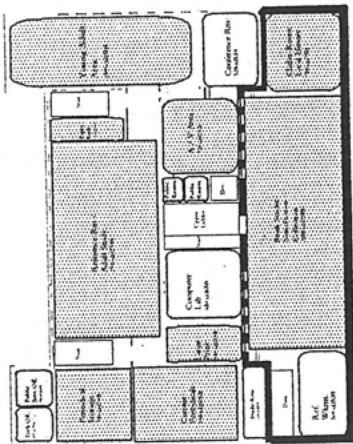


GROSS AREA: 5,770 sf

Second

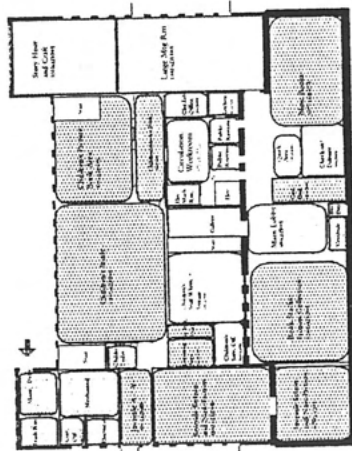


TOTAL GROSS AREA: 41,950 sf



GROSS AREA: 17,900 sf

First



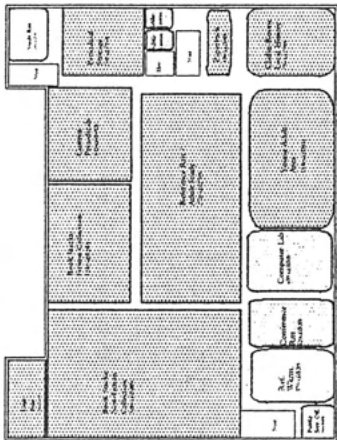
GROSS AREA: 18,280 sf

Ground

The Belmont Memorial Library Belmont, Massachusetts

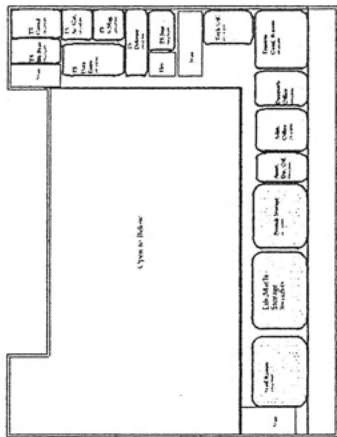
New Building Option

Release Date: 12 July 2006



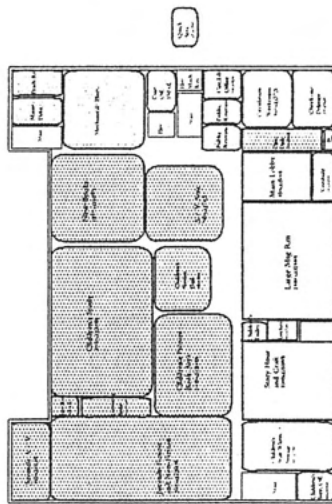
First

GROSS AREA: 17,800 sf



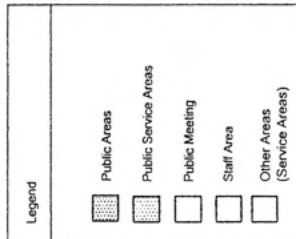
Second

GROSS AREA: 6,340 sf



Ground

GROSS AREA: 17,800 sf

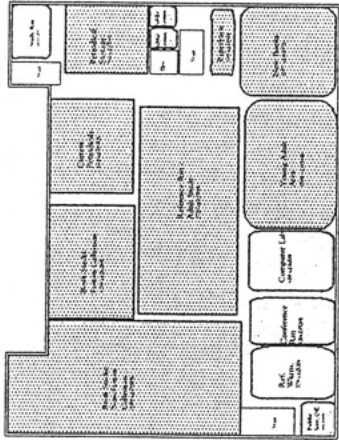


TOTAL GROSS AREA: 41,960 sf

The Belmont Memorial Library Belmont, Massachusetts

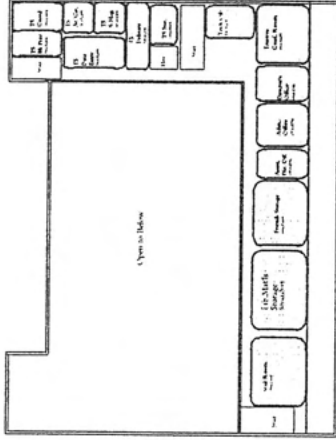
Release Date: 7 Aug. 2000

New Building Option 2



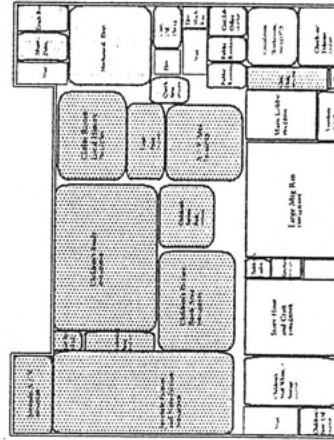
First

GROSS AREA: 17,800 sf



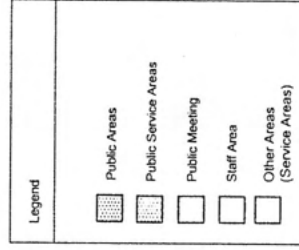
Second

GROSS AREA: 6,360 sf



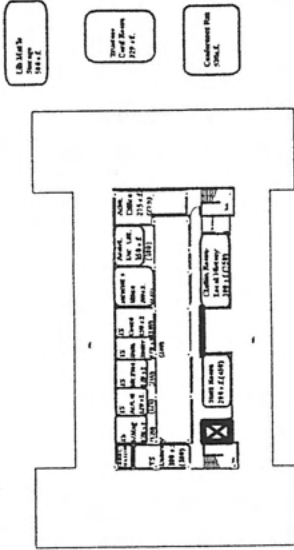
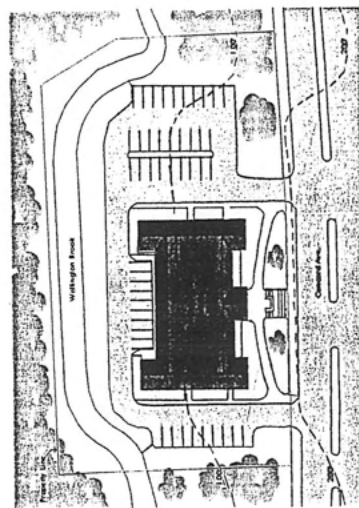
Ground

GROSS AREA: 17,800 sf



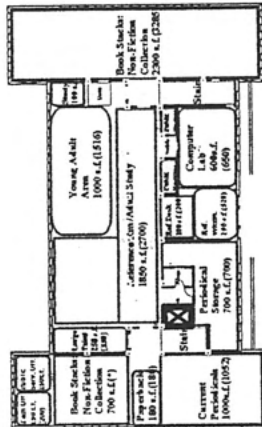
TOTAL GROSS AREA: 41,960 sf

FEASIBILITY STUDY-OPTION 1 EXISTING BUILDING RENOVATION



GROSS AREA: 2,770 sf

Second



GROSS AREA: 12,380 sf

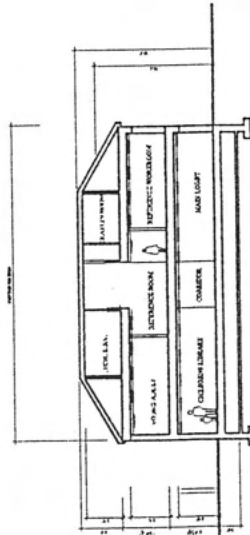
First

Site Plan

Existing Building

	Gross Area
Ground Floor:	12,760 SF
First Floor :	12,380 SF
Second Floor :	2,770 SF
Total :	27,900 SF
Program Gross Area Required:	42,170 SF

Note: Gross Area is taken to outside face of exterior wall

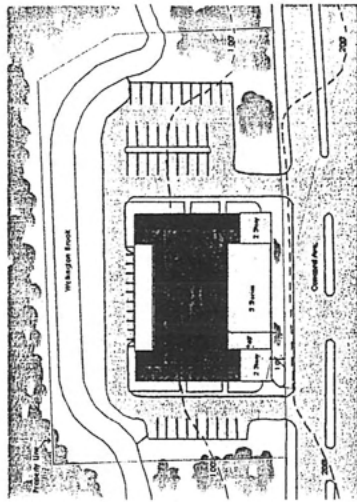


GROSS AREA: 12,760 sf

Ground

- ISSUES
- + Grade level main entry
 - + Existing building footprint no variances required
 - Cost
 - Building size does not meet required program

FEASIBILITY STUDY-OPTION 2 ADDITION AND RENOVATION TO EXISTING BUILDING

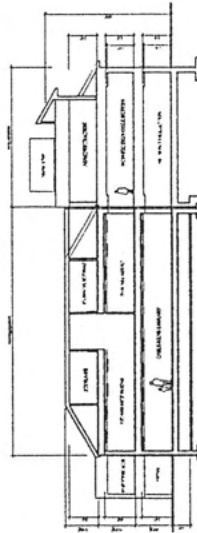


Site Plan

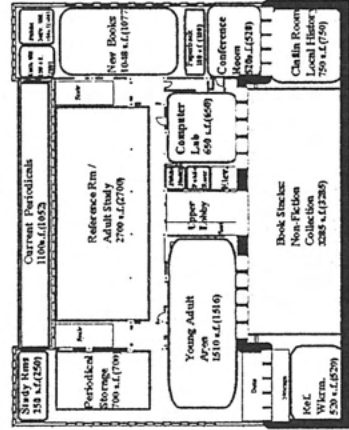
Building extended at front

Ground Floor:	+/- 18,280 SF
First Floor :	+/- 18,900 SF
Second Floor :	+/- 5,770 SF
Total :	+/- 42,950 SF

Program Gross Area Required: **42,170 SF**

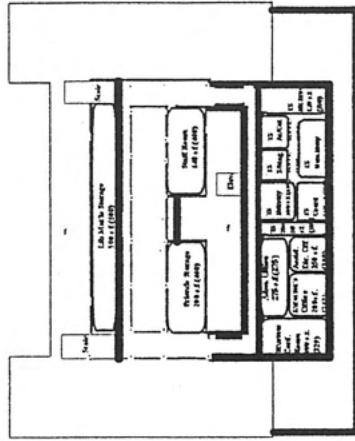


NEW MODERNIZATION SECTION



First

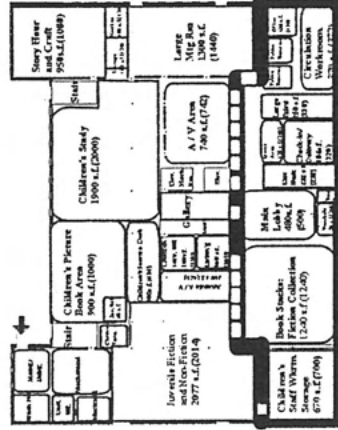
GROSS AREA: 18,900 sf



Second

GROSS AREA: 5,770 sf

- Issues
- + Grade level main entry
 - +/- Cost
 - + Building size meets required program
 - Working with existing building is less efficient
 - Variances required for number of floors, height & front setback
 - Addition must match existing floor-to-floor height (+/- 10'-7") Marginally sufficient for new building support systems
 - Existing building not efficiently insulated
 - Spaces are difficult to supervise due to the limitation in the opening size of existing walls



Ground

GROSS AREA: 18,280 sf

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Belmont Memorial Library

Belmont, Massachusetts

Preliminary Conceptual Estimate

Revised: 2/8/2001

Renovation

\$5,149,760

Item

Total

Construction

Preliminary Construction Estimate (Daedalus Projects, Inc.)

\$3,700,000

Site Development

\$0

Asbestos Abatement (Existing Building)

\$150,000

Subtotal

\$3,850,000

Furnishings Allowance

\$0

Fees Allowance

Architectural Subtotal

\$460,000

Reimbursable Expenses

Allow

\$15,000

Furnishing Fee

Allow

\$0

Peer Reviews

Allow

\$5,000

Geotechnical Investigations, Borings & Survey

Allow

\$0

Civil Engineering

Allow

\$0

Landscape

Allow

\$0

Subtotal Fees

\$480,000

Project Expenses Allowance

Printing

Allow

\$10,000

Construction Testing

Allow

\$5,000

Misc. Expenses

Allow

\$10,000

Moving Expenses

Allow

\$25,000

Tele/Data Installation

Allow

\$20,000

Owner's Representative

Allow

\$0

Subtotal Expenses

\$70,000

Project Contingency

12.00%

\$528,000

Total Preliminary Budget Estimate of Probable Project Cost (Sept 2001 Dollars)

\$4,928,000

Project Escalation

Project Escalation - 12 Months - 2002

4.50%

\$221,760

Total Preliminary Budget Estimate of Probable Project Cost

\$5,149,760

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Belmont Memorial Library

Belmont, Massachusetts

Preliminary Conceptual Estimate

6-Sep-00

Renovation/Addition

\$10,426,655

Item

Total

Construction

Preliminary Construction Estimate (Daedalus Projects, Inc.)		\$6,300,000
Site Development		\$500,000
Asbestos Abatement (Existing Building)		\$150,000

Subtotal

\$6,950,000

Furnishings Allowance

\$400,000

Fees Allowance

<i>Architectural Subtotal</i>		\$695,000
Reimbursable Expenses	Allow	\$40,000
Furnishing Fee	Allow	\$80,000
Peer Reviews	Allow	\$10,000
Geotechnical Investigations, Borings & Survey	Allow	\$25,000
Civil Engineering	Allow	\$25,000
Landscape	Allow	\$20,000
Subtotal Fees		<u>\$895,000</u>

Project Expenses Allowance

Printing	Allow	\$30,000
Construction Testing	Allow	\$20,000
Misc. Expenses	Allow	\$30,000
Moving Expenses	Allow	\$25,000
Tele/Data Installation	Allow	\$75,000
Owner's Representative	Allow	\$100,000
Subtotal Expenses		<u>\$280,000</u>

Project Contingency

12.00% \$1,023,000

Total Preliminary Budget Estimate of Probable Project Cost (Current Dollars) \$9,548,000

Project Escalation

Project Escalation - 12 Months 4.50% \$429,660

Subtotal (2001)

\$9,977,660

Project Escalation - 12 Months - 2002 4.50% \$448,995

Total Preliminary Budget Estimate of Probable Project Cost **\$10,426,655**

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Belmont Memorial Library

Belmont, Massachusetts

Preliminary Conceptual Estimate

6-Sep-00

New Building - Basic Materials

\$11,081,324

Item

Total

Construction

Preliminary Construction Estimate (Daedalus Projects, Inc.)		\$7,000,000
Site Development		\$500,000
Asbestos Abatement (Existing Building)		\$150,000

Subtotal

\$7,650,000

Furnishings Allowance

\$400,000

Fees Allowance

<i>Architectural Subtotal</i>		\$695,000
Reimbursable Expenses	Allow	\$40,000
Furnishing Fee	Allow	\$80,000
Peer Reviews	Allow	\$10,000
Geotechnical Investigations, Borings & Survey	Allow	\$25,000
Civil Engineering	Allow	\$25,000
Landscape	Allow	\$20,000
Subtotal Fees		\$895,000

Project Expenses Allowance

Printing	Allow	\$30,000
Construction Testing	Allow	\$20,000
Misc. Expenses	Allow	\$30,000
Moving Expenses	Allow	\$25,000
Tele/Data Installation	Allow	\$75,000
Owner's Representative	Allow	\$100,000
Subtotal Expenses		\$280,000

Project Contingency

10.00% \$922,500

Total Preliminary Budget Estimate of Probable Project Cost (Current Dollars) \$10,147,500

Project Escalation

Project Escalation - 12 Months - 2001 4.50% \$456,638

Subtotal (2001)

\$10,604,138

Project Escalation - 12 Months - 2002 4.50% \$477,186

Total Preliminary Budget Estimate of Probable Project Cost

\$11,081,324

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Belmont Memorial Library

Belmont, Massachusetts

Preliminary Conceptual Estimate

6-Sep-00

New Building - Similar Materials to Existing

\$12,042,306

Item

Total

Construction

Preliminary Construction Estimate (Daedalus Projects, Inc.)		\$7,800,000
Site Development		\$500,000
Asbestos Abatement (Existing Building)		\$150,000

Subtotal

\$8,450,000

Furnishings Allowance

\$400,000

Fees Allowance

<i>Architectural Subtotal</i>		\$695,000
Reimbursable Expenses	Allow	\$40,000
Furnishing Fee	Allow	\$80,000
Peer Reviews	Allow	\$10,000
Geotechnical Investigations, Borings & Survey	Allow	\$25,000
Civil Engineering	Allow	\$25,000
Landscape	Allow	\$20,000
Subtotal Fees		\$895,000

Project Expenses Allowance

Printing	Allow	\$30,000
Construction Testing	Allow	\$20,000
Misc. Expenses	Allow	\$30,000
Moving Expenses	Allow	\$25,000
Tele/Data Installation	Allow	\$75,000
Owner's Representative	Allow	\$100,000
Subtotal Expenses		\$280,000

Project Contingency

10.00% \$1,002,500

Total Preliminary Budget Estimate of Probable Project Cost (Current Dollars)

\$11,027,500

Project Escalation

Project Escalation - 12 Months - 2001 4.50% \$496,238

Subtotal (2001)

\$11,523,738

Project Escalation - 12 Months - 2002 4.50% \$518,568

Total Preliminary Budget Estimate of Probable Project Cost

\$12,042,306

**Belmont Memorial Library
Renovation and Additions**

Feasibility Estimate
Belmont, MA

September 7, 2000

Daedalus Projects Inc.
112 South Street
Boston, MA 02111
(617) 451-2717

Tappe Associates Inc.
Six Edgerly Place
Boston, MA 02116
(617) 451-0200

Belmont Memorial Library
Belmont, MA

September 7, 2000
Feasibility Estimate

INTRODUCTION

The following estimate is based upon drawings from Tappe Associates Inc. and additional information.

The following assumptions have been made.

- The project will be publicly bid under Chapter 149 requirements. Our costs assume that there will be at least three subcontractors submitting unrestricted bids in each filed sub-trade.
- Prices are based current 2000 dollars. Escalation has been included at 4.5%.

The following items are not included in the estimate:

- Design fees and other soft costs.
- Construction contingency (for change orders).
- Construction of temporary facilities.
- Moving and storage expense.
- Loose furnishings, fixtures and equipment.
- Sitework.

Markups:

- The General Conditions, Overhead and Profit (G.C.O. & P.) have been included at 15%.
- Design Contingency of has been included in our estimate at 10%.
- Escalation has been included at 4.5%.

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Belmont Memorial Library
 Renovation
 Belmont, MA

September 7, 2000
 Feasibility Estimate

MAIN SUMMARY

ELEMENT	COST	COST/SF
<u>Option 1:</u>		
Renovation	\$3,587,226	\$128.12
Option 1 Total	\$3,587,226	\$128.12
<u>Option 2:</u>		
Renovation	\$3,559,226	\$127.12
Addition	\$2,463,427	\$175.96
Option 2 Total	\$6,022,652	\$143.40
<u>Option 3:</u>		
New Building	\$7,410,212	\$176.43
Option 3 Total	\$7,410,212	\$176.43

Belmont Memorial Library
 Renovation
 Belmont, MA

September 7, 2000
 Feasibility Estimate
 28,000 GSF

MAIN SUMMARY

ELEMENT	COST	COST/SF
02B-BUILDING SITEWORK	\$145,000	\$5.18
03-CONCRETE	\$14,500	\$0.52
04-MASONRY	\$179,000	\$6.39
05-METALS	\$116,790	\$4.17
06-CARPENTRY	\$80,000	\$2.86
07-THERMAL & MOISTURE PROTECTION	\$147,413	\$5.26
08-DOORS & WINDOWS	\$415,650	\$14.84
09-FINISHES	\$390,654	\$13.95
10-SPECIALTIES	\$52,150	\$1.86
11-EQUIPMENT	\$25,000	\$0.89
12-FURNISHINGS	\$146,300	\$5.23
15-MECHANICAL	\$602,000	\$21.50
16-ELECTRICAL	\$378,000	\$13.50
Subtotal	\$2,692,457	\$96.16
General Conditions Overhead & Profit (15%)	\$403,868.48	\$14.42
Subtotal	\$3,096,325	\$110.58
Design Contingency (10%)	\$309,632	\$11.06
Subtotal	\$3,405,957	\$121.64
Escalation (4.5%)	\$153,268	\$5.47
TOTAL	\$3,559,226	\$127.12
	<i>3,545,369</i>	<i>120.52</i>
Option 1: Add Vestibule	\$28,000	

Belmont Memorial Library
Renovation
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
02B-BUILDING SITEWORK				
Demolition	28,000	SF	5.00	\$140,000
Cutting and patching	1	LS	5,000.00	\$5,000
BUILDING SITEWORK TOTAL				\$145,000
03-CONCRETE				
Elevator pit	1	EA	7,500.00	\$7,500
Self-leveling concrete	1	LS	2,000.00	\$2,000
Concrete pads	1	LS	5,000.00	\$5,000
CONCRETE TOTAL				\$14,500
04-MASONRY				
Exterior veneer work	15,400	SF	10.00	\$154,000
Masonry detail	1	LS	25,000.00	\$25,000
MASONRY TOTAL				\$179,000
05-METALS				
Structural steel	10	TNS	2,500.00	\$25,000
Egress stairs; complete	4	FLT	10,000.00	\$40,000
Main stairs	1	FLT	20,000.00	\$20,000
Expansion joint	194	LF	35.00	\$6,790
Allow for miscellaneous metals	1	LS	25,000.00	\$25,000
METAL TOTAL				\$116,790
06-CARPENTRY				
<i>Rough Carpentry:</i> Rough carpentry	1	LS	40,000.00	\$40,000
<i>Finish Carpentry:</i> Finish carpentry	1	LS	40,000.00	\$40,000
CARPENTRY TOTAL				\$80,000

Belmont Memorial Library
Renovation
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
07-THERMAL & MOISTURE PROTECTION				
Metal oxide elevator pit	150	SF	15.00	\$2,250
Batt insulation to exterior	11,550	SF	0.75	\$8,663
Fireproofing	1	LS	5,000.00	\$5,000
Firestopping	1	LS	3,500.00	\$3,500
Remove and replace roof	15,000	SF	7.50	\$112,500
Walkpads; allow	1	LS	3,500.00	\$3,500
Miscellaneous roof accessories, flashing, etc.	1	LS	2,000.00	\$2,000
Expansion joint roof cover	1	LS	5,000.00	\$5,000
Caulking and sealing	1	LS	5,000.00	\$5,000
THERMAL & MOISTURE PROTECTION TOTAL				\$147,413
08-DOORS & WINDOWS				
Metal frames	80	EA	175.00	\$14,000
Ditto; pair doors	15	EA	200.00	\$3,000
Interior doors	80	EA	250.00	\$20,000
Ditto; pair	15	EA	500.00	\$7,500
Hardware	110	EA	400.00	\$44,000
Access panels	1	LS	3,500.00	\$3,500
Entry doors	4	PR	6,500.00	\$26,000
Egress doors; single allow	6	EA	1,800.00	\$10,800
Aluminum windows	5,100	SF	43.50	\$221,850
Allow for curtainwall/storefront	1,000	SF	60.00	\$60,000
Allow for glazing	1	LS	5,000.00	\$5,000
DOORS & WINDOWS TOTAL				\$415,650

Belmont Memorial Library
Renovation
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
09-FINISHES				
<i>Gypsum Wallboard:</i>				
Interior of exterior skin	15,400	SF	1.85	\$28,490
GWB soffits	2,700	SF	5.50	\$14,850
Interior partitions	27,300	SF	5.00	\$136,500
Allow for chase walls	1	LS	10,000.00	\$10,000
<i>Tile:</i>				
Ceramic tile flooring	1,500	SF	7.50	\$11,250
Tile base	350	LF	6.50	\$2,275
Ceramic tile walls	3,150	SF	7.50	\$23,625
<i>Acoustical Ceiling Tile:</i>				
ACT	26,600	SF	1.65	\$43,890
<i>Acoustical Wall Treatment:</i>				
Acoustical wall treatment	1	LS	10,000.00	\$10,000
<i>Resilient Flooring/Carpet:</i>				
VCT/Carpet	24,200	SF	2.00	\$48,400
Rubber treads and risers	484	LFR	15.50	\$7,502
Rubber landing	312	SF	6.00	\$1,872
Vinyl base; allow	1	LS	10,000.00	\$10,000
<i>Painting:</i>				
Painting allowance	28,000	SF	1.50	\$42,000
FINISHES TOTAL				\$390,654
10-SPECIALTIES				
<i>Tackboards and Chalkboards:</i>				
Allow for tack., chalk. & markerboards	1	LS	20,000.00	\$20,000
<i>Louvers</i>				
Louvers	1	LS	10,000.00	\$10,000
<i>Identifying Devices:</i>				
New signage	28,000	SF	0.15	\$4,200
Room number and identification	110	EA	125.00	\$13,750
<i>Fire Extinguishers and Cabinets:</i>				
Fire extinguishers and cabinets, recessed	12	EA	350.00	\$4,200
SPECIALTIES TOTAL				\$52,150

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Belmont Memorial Library
Renovation
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
11-EQUIPMENT				
Manual projection screens	1	LS	25,000.00	\$25,000
EQUIPMENT TOTAL				\$25,000
12-FURNISHINGS				
Casework	1	LS	125,000.00	\$125,000
Entry pad	100	SF	30.00	\$3,000
Window treatment	6,100	SF	3.00	\$18,300
FURNISHINGS TOTAL				\$146,300
15-MECHANICAL				
New fire protection	28,000	SF	2.75	\$77,000
Plumbing fixtures	28,000	SF	4.00	\$112,000
HVAC	28,000	SF	14.75	\$413,000
MECHANICAL TOTAL				\$602,000
16-ELECTRICAL				
Electrical	28,000	SF	13.50	\$378,000
ELECTRICAL TOTAL				\$378,000
<p>REPLACE EXISTING SYSTEM</p> <p style="text-align: center;">485100</p>				

485100

16.50
+ 5%

Belmont Memorial Library
 New Addition: Option 2
 Belmont, MA

September 7, 2000
 Feasibility Estimate
 14,000 GSF

MAIN SUMMARY

ELEMENT	COST	COST/SF
02B-BUILDING SITEWORK	\$132,470	\$9.46
03-CONCRETE	\$89,006	\$6.36
04-MASONRY	\$165,000	\$11.79
05-METALS	\$287,098	\$20.51
06-CARPENTRY	\$40,000	\$2.86
07-THERMAL & MOISTURE PROTECTION	\$81,905	\$5.85
08-DOORS & WINDOWS	\$233,600	\$16.69
09-FINISHES	\$212,636	\$15.19
10-SPECIALTIES	\$25,100	\$1.79
11-EQUIPMENT		
12-FURNISHINGS	\$110,200	\$7.87
15-MECHANICAL	\$290,500	\$20.75
16-ELECTRICAL	\$196,000	\$14.00
Subtotal	\$1,863,515	\$133.11
General Conditions Overhead & Profit (15%)	\$279,527.22	\$19.97
Subtotal	\$2,143,042	\$153.07
Design Contingency (10%)	\$214,304	\$15.31
Subtotal	\$2,357,346	\$168.38
Escalation (4.5%)	\$106,080.58	\$7.58
TOTAL	\$2,463,427	\$175.96

Belmont Memorial Library
New Addition: Option 2
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
02B-BUILDING SITEWORK				
Trench excavation	407	CY	12.00	\$4,884
Bulk excavation	427	CY	10.00	\$4,270
Backfill in imported structural fill	714	CY	22.00	\$15,708
Disposal	126	CY	9.00	\$1,134
Compacted gravel below slab	213	CY	20.00	\$4,260
Perimeter drainage	186	LF	12.00	NIC
Rough and fine grading to footprint	640	SY	1.00	\$640
Underpinning	29	CY	1,300.00	\$37,700
Cut down existing roof edge	186	LF	25.00	\$4,650
Rock excavation				NIC
Regrading	1	LS	25,000.00	\$25,000
Allow for miscellaneous demolition to connect to existing building	6,408	SF	3.00	\$19,224
Miscellaneous exterior demolition	1	LS	15,000.00	\$15,000
BUILDING SITEWORK TOTAL				\$132,470
03-CONCRETE				
<i>Concrete to:</i>				
Continuous footings	18	CY	110.00	\$1,980
Isolated/Column footings	28	CY	110.00	\$3,080
Foundation walls	36	CY	110.00	\$3,960
Ground floor slabs; 5"	99	CY	115.00	\$11,385
Upper slab	119	CY	130.00	\$15,470
<i>Reinforcing to:</i>				
Continuous footings	1,170	LBS	0.65	\$761
Isolated/Column footings	2,100	LBS	0.65	\$1,365
Foundation walls	5,400	LBS	0.65	\$3,510
Ground floor slabs; 5"; allow WWF top	5,760	SF	0.55	\$3,168
Upper slab; WWF	8,240	SF	0.65	\$5,356
<i>Formwork to:</i>				
Continuous footings	436	SF	7.50	\$3,270
Isolated/Column footings	395	SF	8.50	\$3,358
Foundation walls	1,744	SF	7.50	\$13,080
<i>Miscellaneous</i>				
Cure, screed and protect slabs	14,000	EA	0.60	\$8,400
Vapor barrier	5,760	SF	0.15	\$864
Concrete pads	1	LS	5,000.00	\$5,000
General conditions	1	LS	5,000.00	\$5,000
CONCRETE TOTAL				\$89,006

Belmont Memorial Library
New Addition: Option 2
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
04-MASONRY				
Exterior veneer	6,000	SF	25.00	\$150,000
Masonry detail	1	LS	15,000.00	\$15,000
MASONRY TOTAL				\$165,000
05-METALS				
Structural steel; (allow 12/SF)	84	TNS	2,200.00	\$184,800
Shear studs	1,600	EA	2.25	\$3,600
Metal stud backup	6,000	SF	4.00	\$24,000
Metal floor deck	8,240	SF	1.95	\$16,068
Metal roof deck	6,400	SF	1.85	\$11,840
Acoustical roof decking				NIC
Egress stairs; complete	2	FLT	10,000.00	\$20,000
Expansion joint	194	LF	35.00	\$6,790
Allow for miscellaneous metals	1	LS	20,000.00	\$20,000
METAL TOTAL				\$287,098
06-CARPENTRY				
<i>Rough Carpentry:</i>				
Rough carpentry	1	LS	20,000.00	\$20,000
<i>Finish Carpentry:</i>				
Casework	1	LS	20,000.00	\$20,000
CARPENTRY TOTAL				\$40,000
07-THERMAL & MOISTURE PROTECTION				
Spray waterproof foundation wall	872	SF	0.65	\$567
Dampproof masonry walls	6,000	SF	1.50	\$9,000
Rigid insulation to foundation walls	1,244	SF	2.00	\$2,488
Batt insulation to exterior	6,000	SF	0.75	\$4,500
Fireproofing	1	LS	5,000.00	\$5,000
Firestopping	1	LS	3,500.00	\$3,500
Roofing systems	6,400	SF	6.25	\$40,000
Walkpads; allow	1	LS	2,000.00	\$2,000
Miscellaneous roof accessories, flashing, etc.	1	LS	5,000.00	\$5,000
Expansion joint roof cover	194	LF	25.00	\$4,850
Caulking and sealing	1	LS	5,000.00	\$5,000
THERMAL & MOISTURE PROTECTION TOTAL				\$81,905

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Belmont Memorial Library
 New Addition: Option 2
 Belmont, MA

September 7, 2000
 Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
08-DOORS & WINDOWS				
Metal frames	50	EA	175.00	\$8,750
Ditto; pair doors	10	EA	200.00	\$2,000
Interior doors	50	EA	250.00	\$12,500
Ditto; pair	10	EA	500.00	\$5,000
Hardware	70	EA	375.00	\$26,250
Access panels	1	LS	3,500.00	\$3,500
Entry doors	4	PR	6,500.00	\$26,000
Egress doors; single allow	2	EA	1,800.00	\$3,600
Aluminum windows	2,200	SF	45.00	\$99,000
Allow for curtainwall/storefront	700	SF	60.00	\$42,000
Allow for glazing	1	LS	5,000.00	\$5,000
DOORS & WINDOWS TOTAL				\$233,600
09-FINISHES				
<i>Gypsum Wallboard:</i>				
Gypsum sheathing	6,000	SF	1.50	\$9,000
Interior of exterior skin	6,000	SF	1.85	\$11,100
GWB soffits	1,300	SF	5.50	\$7,150
Interior partitions	13,700	SF	5.25	\$71,925
Allow for chase walls	1	LS	10,000.00	\$10,000
<i>Tile:</i>				
Ceramic tile flooring	600	SF	7.50	\$4,500
Tile base	140	LF	6.50	\$910
Ceramic tile walls	1,260	SF	7.50	\$9,450
<i>Acoustical Ceiling Tile:</i>				
ACT	13,300	SF	1.65	\$21,945
<i>Acoustical Wall Treatment:</i>				
Acoustical wall treatment	1	LS	10,000.00	\$10,000
<i>Resilient Flooring/Carpet:</i>				
VCT/Carpet	12,354	SF	2.00	\$24,708
Rubber treads and risers	176	LFR	15.50	\$2,728
Rubber landing	120	SF	6.00	\$720
Vinyl base; allow	1	LS	7,500.00	\$7,500
<i>Painting:</i>				
Painting allowance	14,000	SF	1.50	\$21,000
FINISHES TOTAL				\$212,636

Belmont Memorial Library
 New Addition: Option 2
 Belmont, MA

September 7, 2000
 Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
10-SPECIALTIES				
<i>Tackboards and Chalkboards:</i>				
Allow for tack., chalk. & markerboards	1	LS	7,500.00	\$7,500
<i>Louvers</i>				
Louvers	1	LS	5,000.00	\$5,000
<i>Identifying Devices:</i>				
New signage	14,000	SF	0.15	\$2,100
Room number and identification	70	EA	125.00	\$8,750
<i>Fire Extinguishers and Cabinets:</i>				
Fire extinguishers and cabinets, recessed	5	EA	350.00	\$1,750
SPECIALTIES TOTAL				\$25,100
11-EQUIPMENT				
Manual projection screens				NIC
EQUIPMENT TOTAL				
12-FURNISHINGS				
Casework	1	LS	100,000.00	\$100,000
Entry pad	50	SF	30.00	\$1,500
Window treatment	2,900	SF	3.00	\$8,700
FURNISHINGS TOTAL				\$110,200
15-MECHANICAL				
New fire protection	14,000	SF	2.75	\$38,500
Plumbing fixtures	14,000	SF	3.75	\$52,500
HVAC	14,000	SF	14.25	\$199,500
MECHANICAL TOTAL				\$290,500
16-ELECTRICAL				
Electrical	14,000	SF	14.00	\$196,000
ELECTRICAL TOTAL				\$196,000

Belmont Memorial Library
 New Building: Option 3
 Belmont, MA

September 7, 2000
 Feasibility Estimate
 42,000 GSF

MAIN SUMMARY

ELEMENT	COST	COST/SF
02B-BUILDING SITEWORK	\$432,604	\$10.30
03-CONCRETE	\$262,591	\$6.25
04-MASONRY	\$731,000	\$17.40
05-METALS	\$840,765	\$20.02
06-CARPENTRY	\$115,000	\$2.74
07-THERMAL & MOISTURE PROTECTION	\$300,168	\$7.15
08-DOORS & WINDOWS	\$593,850	\$14.14
09-FINISHES	\$601,169	\$14.31
10-SPECIALTIES	\$62,375	\$1.49
11-EQUIPMENT		
12-FURNISHINGS	\$227,600	\$5.42
15-MECHANICAL	\$850,500	\$20.25
16-ELECTRICAL	\$588,000	\$14.00
Subtotal	\$5,605,622	\$133.47
General Conditions Overhead & Profit (15%)	\$840,843.36	\$20.02
Subtotal	\$6,446,466	\$153.49
Design Contingency (10%)	\$644,647	\$15.35
Subtotal	\$7,091,112	\$168.84
Escalation (4.5%)	\$319,100.06	\$7.60
TOTAL	\$7,410,212	\$176.43

Belmont Memorial Library
New Building: Option 3
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
02B-BUILDING SITEWORK				
Trench excavation	1,163	CY	12.00	\$13,956
Bulk excavation	1,259	CY	10.00	\$12,590
Backfill in imported structural fill	2,086	CY	22.00	\$45,892
Disposal	353	CY	9.00	\$3,177
Compacted gravel below slab	630	CY	20.00	\$12,600
Elevator pit excavation	1	EA	3,500.00	\$3,500
Rough and fine grading to footprint	1,889	SY	1.00	\$1,889
Regrading	1	LS	30,000.00	\$30,000
Demolish existing building	392,000	CF	0.75	\$294,000
Asbestos abatement				NIC
Miscellaneous exterior demolition	1	LS	15,000.00	\$15,000
BUILDING SITEWORK TOTAL				\$432,604
03-CONCRETE				
<i>Concrete to:</i>				
Continuous footings	49	CY	110.00	\$5,390
Isolated/Column footings	79	CY	110.00	\$8,690
Foundation walls	98	CY	110.00	\$10,780
Ground floor slabs; 5"	291	CY	115.00	\$33,465
Upper slab	362	CY	130.00	\$47,060
<i>Reinforcing to:</i>				
Continuous footings	3,185	LBS	0.65	\$2,070
Isolated/Column footings	5,925	LBS	0.65	\$3,851
Foundation walls	14,700	LBS	0.65	\$9,555
Ground floor slabs; 5"; allow WWF top	17,000	SF	0.55	\$9,350
Upper slab; WWF	25,000	SF	0.65	\$16,250
<i>Formwork to:</i>				
Continuous footings	1,208	SF	7.50	\$9,060
Isolated/Column footings	1,127	SF	8.50	\$9,580
Foundation walls	4,832	SF	7.50	\$36,240
<i>Miscellaneous</i>				
Cure, screed and protect slabs	42,000	EA	0.60	\$25,200
Vapor barrier	17,000	SF	0.15	\$2,550
Elevator pit	1	EA	3,500.00	\$3,500
Concrete pads	1	LS	5,000.00	\$5,000
General conditions	1	LS	25,000.00	\$25,000
CONCRETE TOTAL				\$262,591

Belmont Memorial Library
New Building: Option 3
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
04-MASONRY				
Exterior veneer	16,600	SF	35.00	\$581,000
Masonry detail	1	LS	150,000.00	\$150,000
MASONRY TOTAL				\$731,000
05-METALS				
Structural steel; (allow 12/SF)	252	TNS	2,200.00	\$554,400
Shear studs	5,000	EA	2.25	\$11,250
Metal stud backup	16,600	SF	4.00	\$66,400
Metal floor deck	25,000	SF	1.95	\$48,750
Metal roof deck	18,900	SF	1.85	\$34,965
Acoustical roof decking				NIC
Egress stairs; complete	4	FLT	10,000.00	\$40,000
Main stairs; complete	1	FLT	20,000.00	\$20,000
Allow for miscellaneous metals	1	LS	65,000.00	\$65,000
METAL TOTAL				\$840,765
06-CARPENTRY				
<i>Rough Carpentry:</i>				
Rough carpentry	1	LS	65,000.00	\$65,000
<i>Finish Carpentry:</i>				
Casework	1	LS	50,000.00	\$50,000
CARPENTRY TOTAL				\$115,000
07-THERMAL & MOISTURE PROTECTION				
Spray waterproof foundation wall	2,416	SF	0.65	\$1,570
Dampproof masonry walls	16,600	SF	1.50	\$24,900
Rigid insulation to foundation walls	3,624	SF	2.00	\$7,248
Batt insulation to exterior	16,600	SF	0.75	\$12,450
Fireproofing	1	LS	15,000.00	\$15,000
Firestopping	1	LS	10,000.00	\$10,000
Roofing systems	18,900	SF	10.00	\$189,000
Walkpads; allow	1	LS	5,000.00	\$5,000
Miscellaneous roof accessories, flashing, etc.	1	LS	25,000.00	\$25,000
Caulking and sealing	1	LS	10,000.00	\$10,000
THERMAL & MOISTURE PROTECTION TOTAL				\$300,168

Belmont Memorial Library
New Building: Option 3
Belmont, MA

September 7, 2000
Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
08-DOORS & WINDOWS				
Metal frames	125	EA	175.00	\$21,875
Ditto; pair doors	25	EA	200.00	\$5,000
Interior doors	125	EA	250.00	\$31,250
Ditto; pair	25	EA	500.00	\$12,500
Hardware	175	EA	375.00	\$65,625
Access panels	1	LS	10,000.00	\$10,000
Entry doors	2	PR	6,500.00	\$13,000
Ditto; single	2	EA	3,500.00	\$7,000
Egress doors; single allow	2	EA	1,800.00	\$3,600
Aluminum windows	6,200	SF	45.00	\$279,000
Allow for curtainwall/storefront	2,000	SF	60.00	\$120,000
Allow for glazing	1	LS	25,000.00	\$25,000
DOORS & WINDOWS TOTAL				\$593,850
09-FINISHES				
<i>Gypsum Wallboard:</i>				
Gypsum sheathing	16,600	SF	1.50	\$24,900
Interior of exterior skin	16,600	SF	1.85	\$30,710
GWB soffits	4,000	SF	5.50	\$22,000
Interior partitions	41,000	SF	5.25	\$215,250
Allow for chase walls	1	LS	20,000.00	\$20,000
<i>Tile:</i>				
Ceramic tile flooring	2,400	SF	7.50	\$18,000
Tile base	560	LF	6.50	\$3,640
Ceramic tile walls	5,040	SF	7.50	\$37,800
<i>Acoustical Ceiling Tile:</i>				
ACT	39,900	SF	1.65	\$65,835
<i>Acoustical Wall Treatment:</i>				
Acoustical wall treatment	1	LS	10,000.00	\$10,000
<i>Resilient Flooring/Carpet:</i>				
VCT/Carpet	36,616	SF	2.00	\$73,232
Rubber treads and risers	484	LFR	15.50	\$7,502
Rubber landing	300	SF	6.00	\$1,800
Vinyl base; allow	1	LS	7,500.00	\$7,500
<i>Painting:</i>				
Painting allowance	42,000	SF	1.50	\$63,000
FINISHES TOTAL				\$601,169

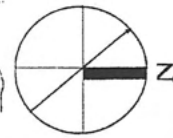
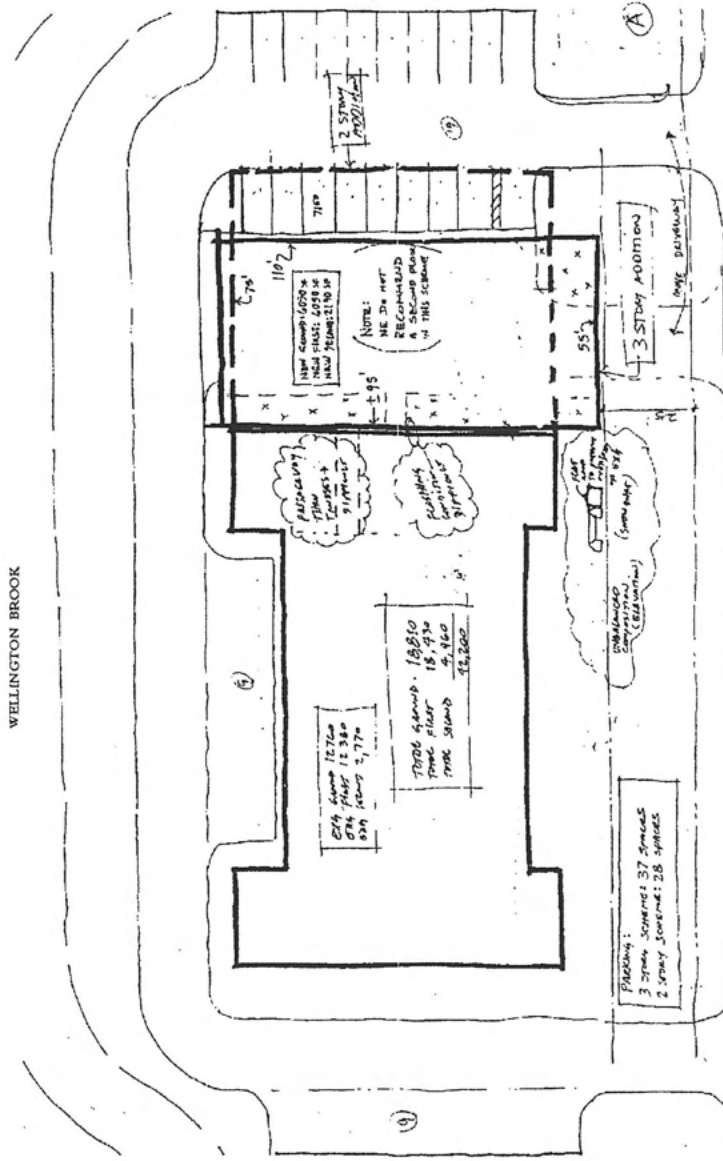
Belmont Memorial Library
 New Building: Option 3
 Belmont, MA

September 7, 2000
 Feasibility Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
10-SPECIALTIES				
<i>Tackboards and Chalkboards:</i>				
Allow for tack., chalk. & markerboards	1	LS	25,000.00	\$25,000
<i>Louvers</i>				
Louvers	1	LS	5,000.00	\$5,000
<i>Identifying Devices:</i>				
New signage	42,000	SF	0.15	\$6,300
Room number and identification	175	EA	125.00	\$21,875
<i>Fire Extinguishers and Cabinets:</i>				
Fire extinguishers and cabinets, recessed	12	EA	350.00	\$4,200
SPECIALTIES TOTAL				\$62,375
11-EQUIPMENT				
Manual projection screens				NIC
EQUIPMENT TOTAL				
12-FURNISHINGS				
Casework	1	LS	200,000.00	\$200,000
Entry pad	100	SF	30.00	\$3,000
Window treatment	8,200	SF	3.00	\$24,600
FURNISHINGS TOTAL				\$227,600
15-MECHANICAL				
New fire protection	42,000	SF	2.50	\$105,000
Plumbing fixtures	42,000	SF	3.75	\$157,500
HVAC	42,000	SF	14.00	\$588,000
MECHANICAL TOTAL				\$850,500
16-ELECTRICAL				
Electrical	42,000	SF	14.00	\$588,000
ELECTRICAL TOTAL				\$588,000

**FEASIBILITY STUDY-SITE OPTION A
ADDITION AT WEST END OF EXISTING BUILDING**

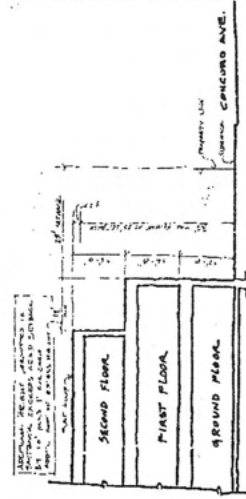
WELLINGTON BROOK



CONCORD AVENUE

ISSUES:

- BUILDING COMPLEX WITH REQUIRED ZONING SETBACKS.
- SECOND LEVEL OF ADDITION CAN BE RECESSED FURTHER TO MEET ZONING HEIGHT REQUIREMENTS.
- FEWER PARKING SPACES THAN EXISTING.
- RELOCATION OF ENTRY DRIVEWAY REQUIRED.
- PART OF ADDITION WITHIN 100 FT FROM EXISTING BROOK (BUT WITHIN EXG. PAVED "DEVELOPED" AREA.
- PARKING DISPERSED THROUGHOUT SITE.
- POTENTIALLY DIFFICULT CONNECTION BETWEEN EXISTING AND NEW SECOND LEVELS.(NO FLOOR AT CONNECTING POINT-ROOF TRUSSES INSTEAD.)
- POTENTIALLY DIFFICULT FLASHING CONDITION WHERE NEW MEETS EXISTING.
- EXISTING EXTERIOR WALL ACTS AS BARRIER BETWEEN EXISTING BUILDING AND NEW CONSTRUCTION.
- NO POTENTIAL FOR FUTURE EXPANSION.
- REMOVAL OF MOUND IN FRONT OF EXISTING BUILDING MAY NOT BE REQUIRED.
- UNBALANCED COMPOSITION.



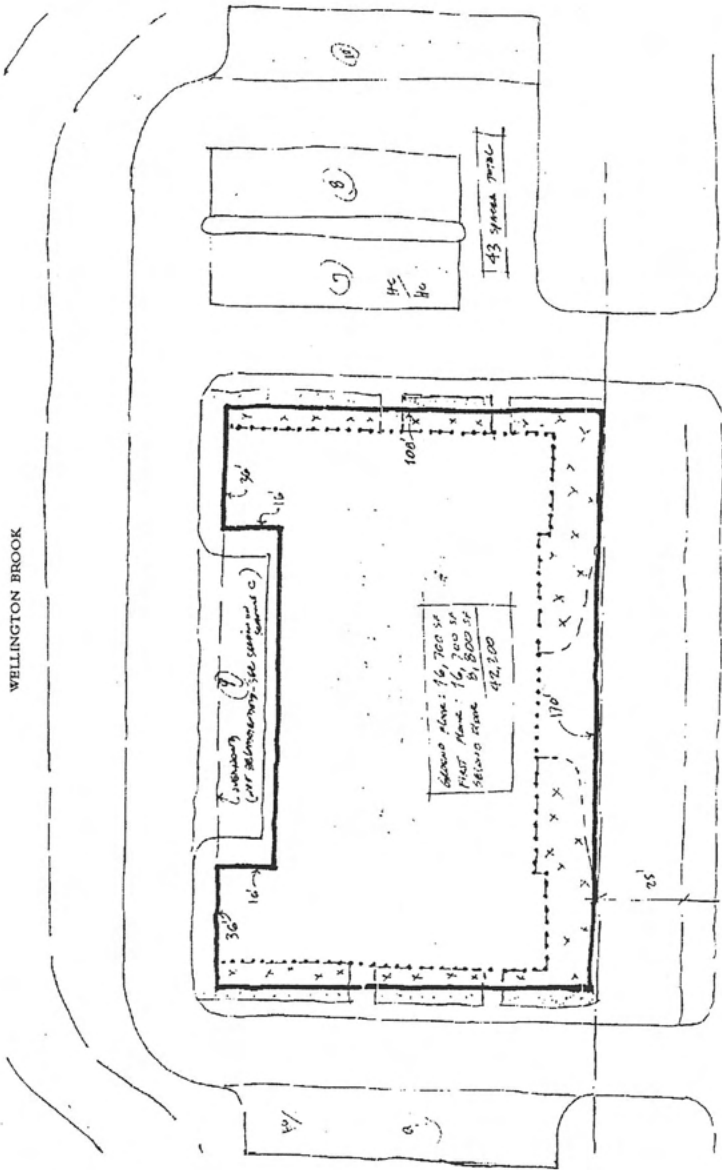
SITE SECTION AT ADDITION

Release Date 8/30/00

BELMONT MEMORIAL LIBRARY
BELMONT, MA

FEASIBILITY STUDY-SITE OPTION B NEW BUILDING IN SAME GENERAL LOCATION AS EXISTING

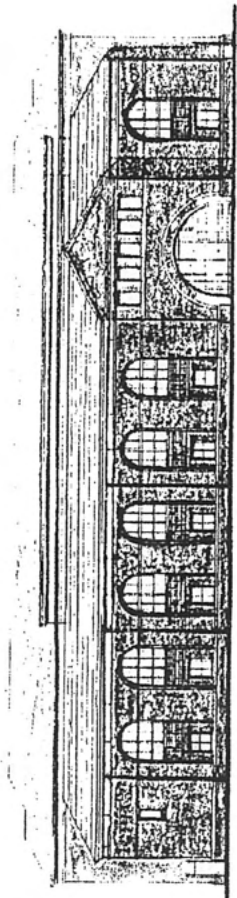
- ISSUES:
- * BUILDING COMPLIES WITH REQUIRED ZONING SETBACKS.
 - * SECOND LEVEL CAN BE RECESSED FURTHER TO MEET ZONING HEIGHT REQUIREMENTS.
 - * KEEPS EXISTING NUMBER OF PARKING SPACES.
 - * REDUCED AMOUNT OF OPEN SPACE.
 - * SMALLER FOOTPRINT REQUIRES RELOCATION OF SOME PROGRAM SPACES TO UPPER FLOORS. (THUS REDUCING POTENTIAL FOR FUTURE EXPANSION.
 - * PARKING DISPERSED THROUGHOUT SITE.
 - * PORTION OF BUILDING WITHIN 100 FT FROM EXISTING BROOK, (BUT WITHIN EXC. PAVED "DEVELOPED" AREA.)



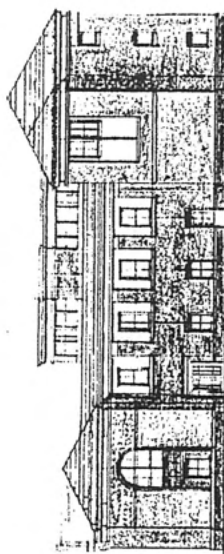
SITE SECTION
Release Date 8/30/00

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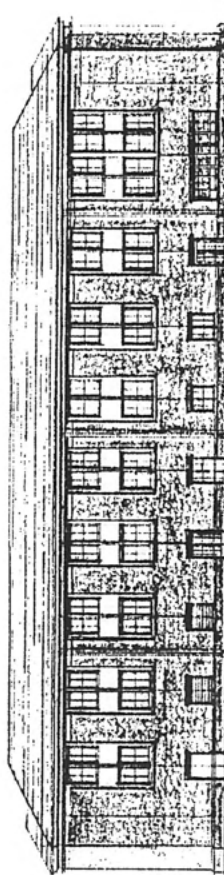
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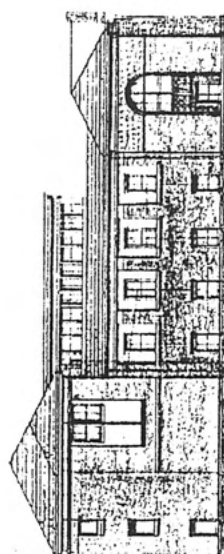
Concord Avenue Elevation



Parking Lot Elevation



Rear Elevation



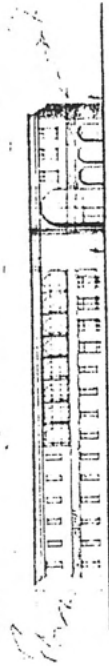
Side Elevation

Release Date 12/18/00

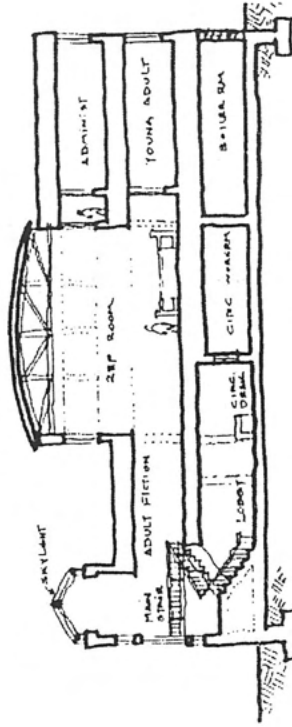
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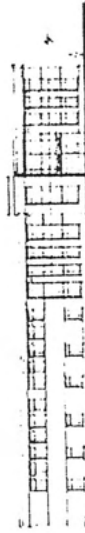
NEW BUILDING - STREET ELEVATION



A



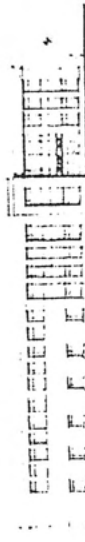
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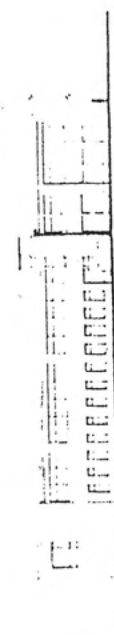
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A

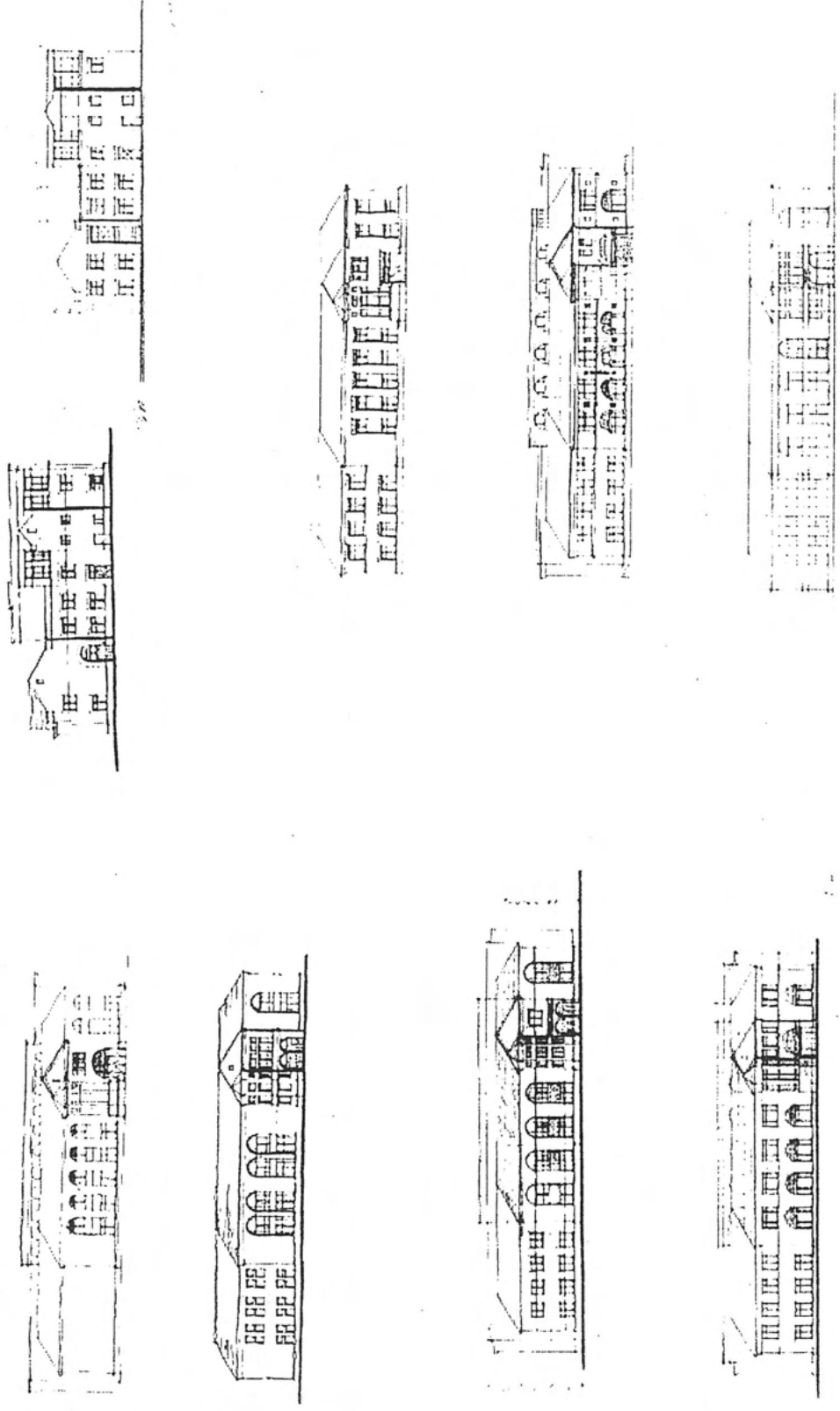


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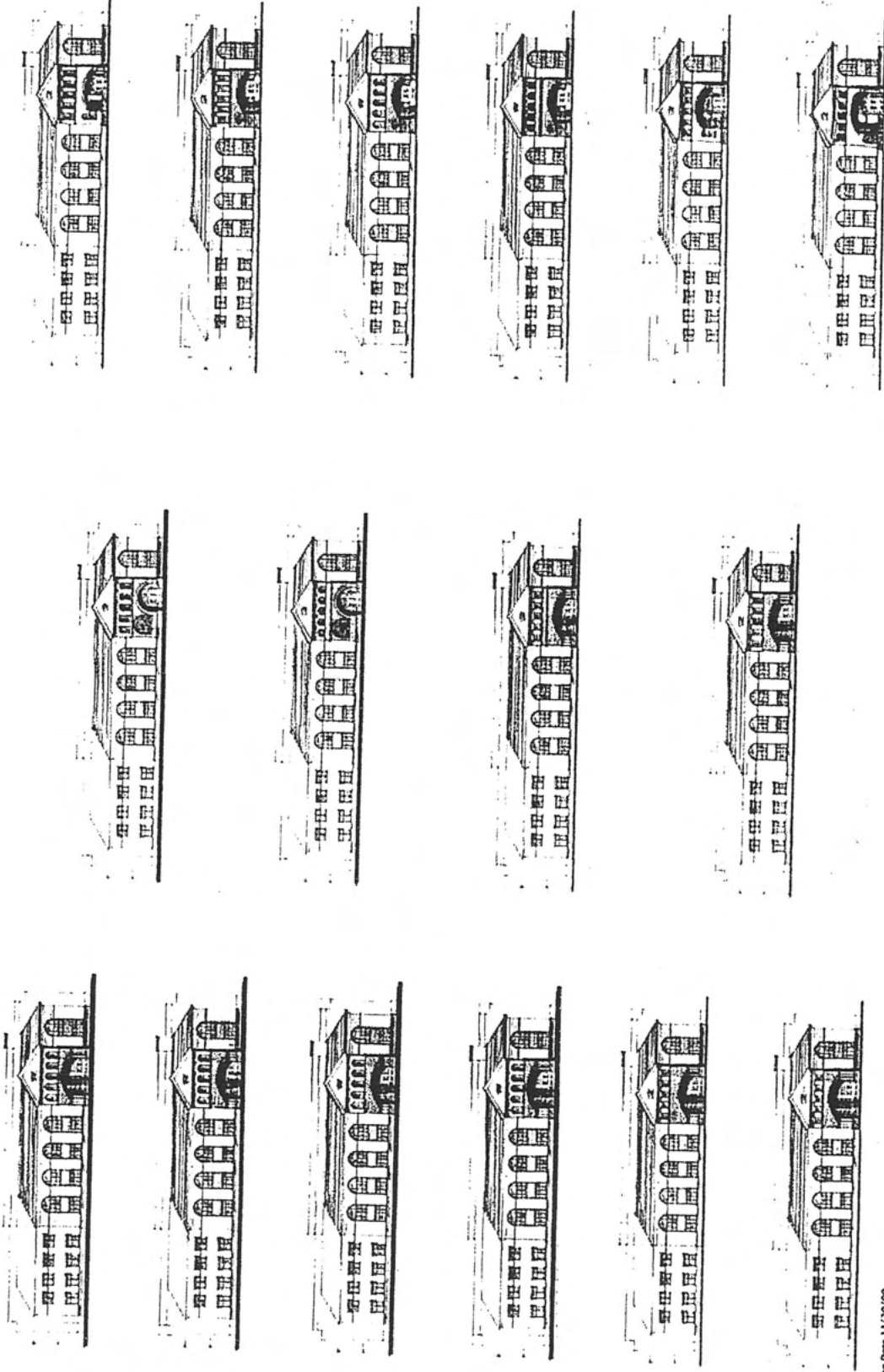


E

NEW BUILDING - ELEVATION STUDIES



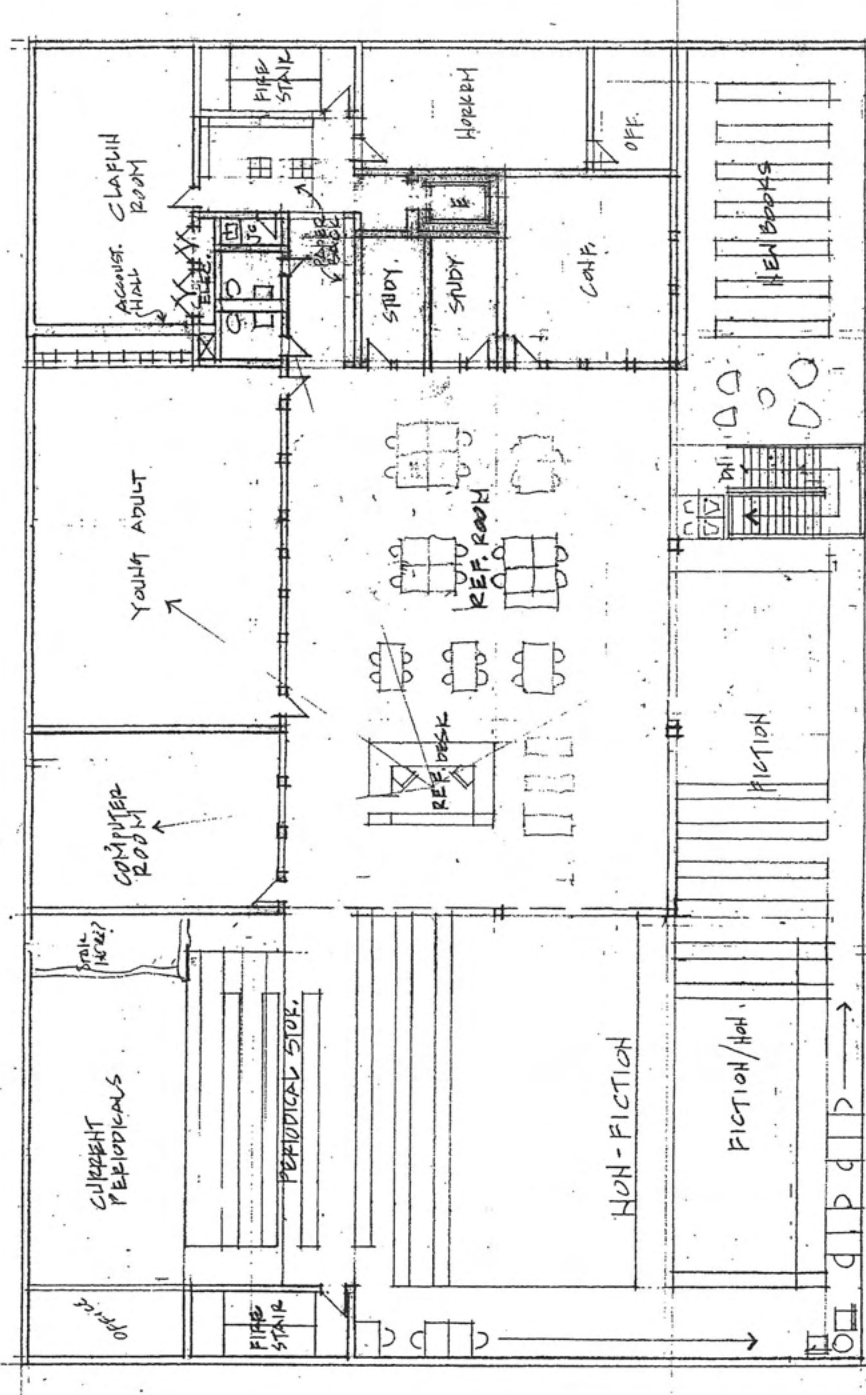
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BELMONT, MA



Reference Date 11/30/00

TAPPÉ ASSOCIATES, INC.
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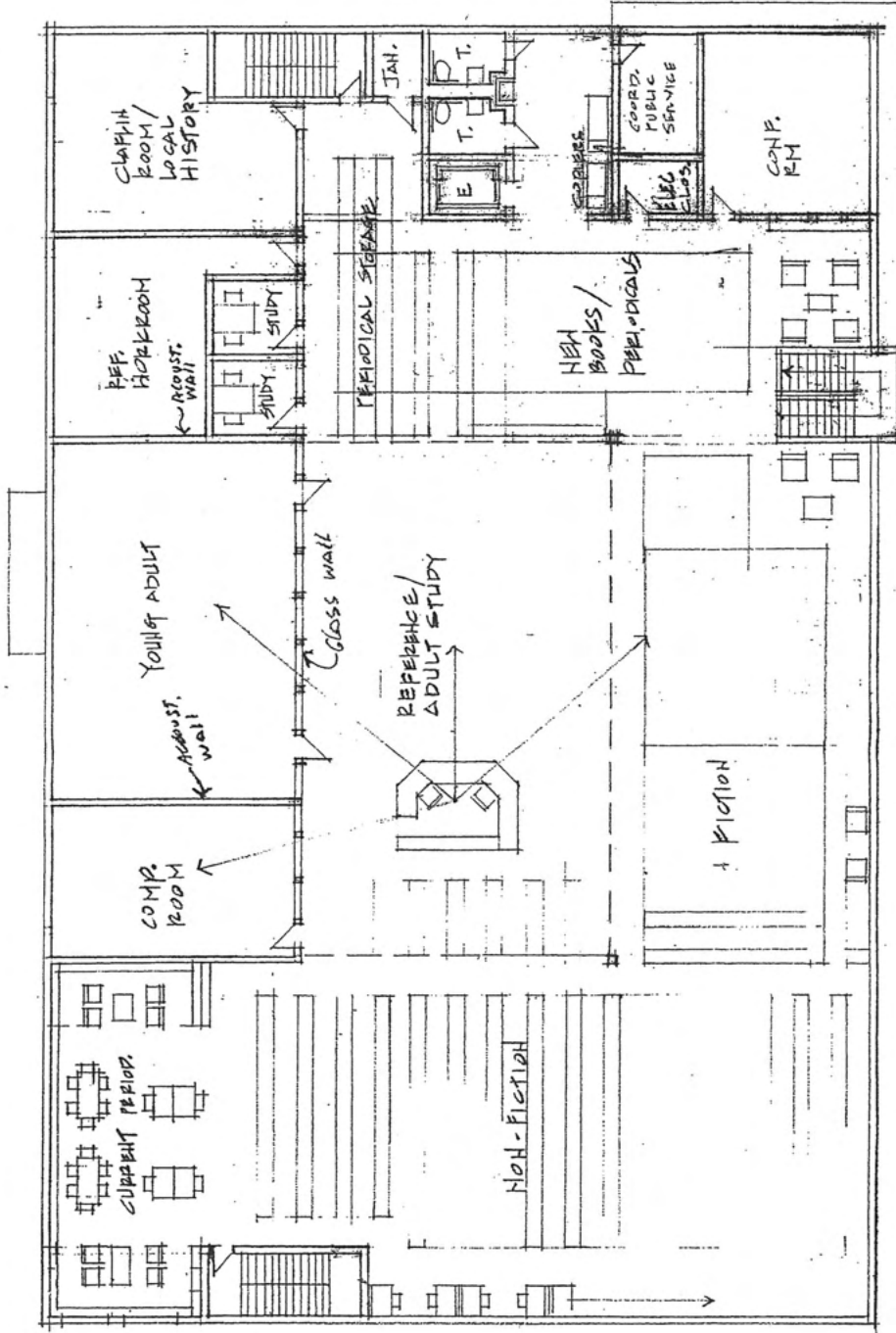
DRAFT



MAIN LEVEL
10/4/00 1/16" = 1'-0"
REVISED 10/6/00

DRAFT

832

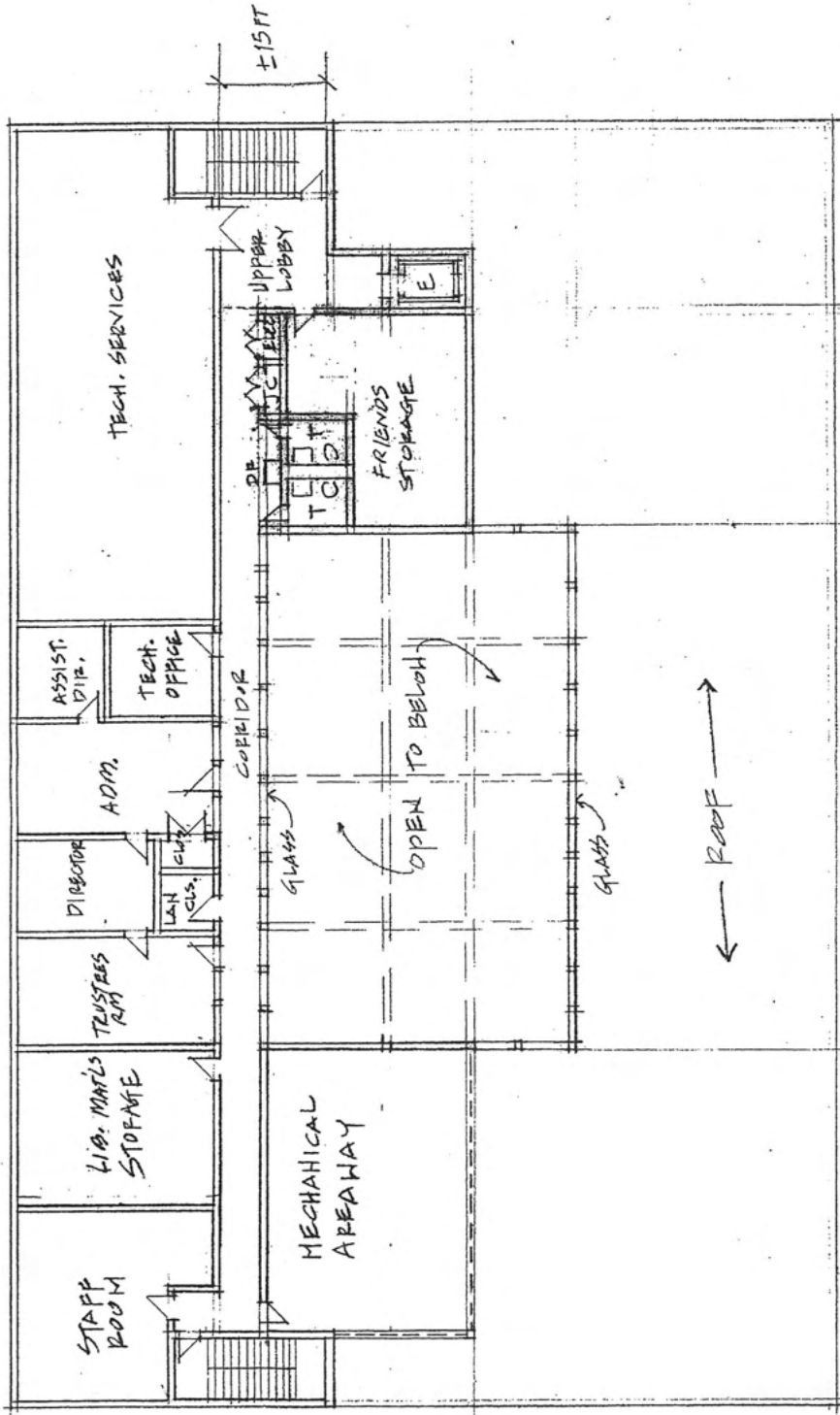


MAIN LEVEL (ALTERNATE PLAN)

10/4/00 1/16" = 1'-0"

REVISED 10/6/00

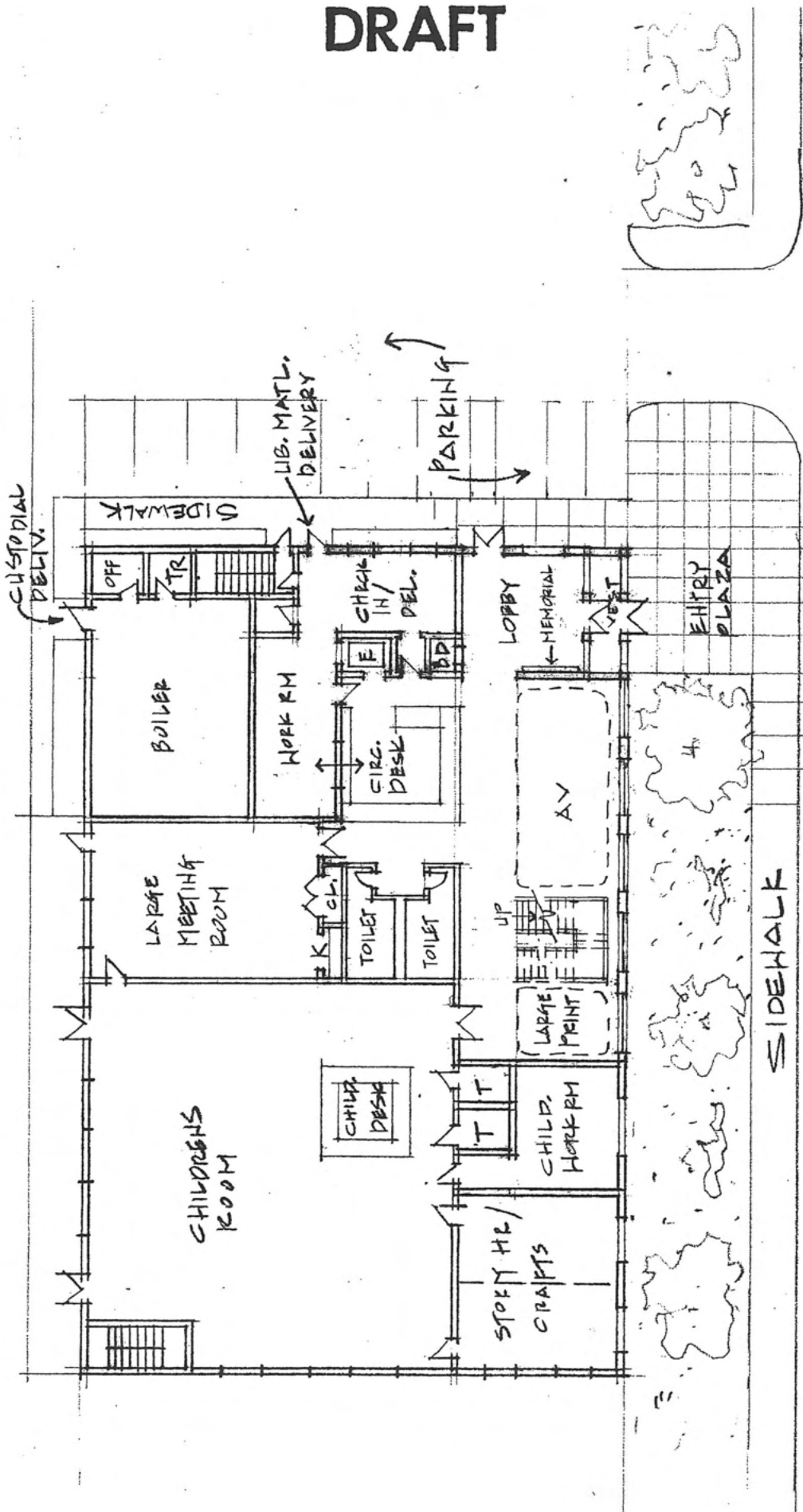
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REVISED 10/6/00

UPPER LEVEL
10/4/00 1/16" = 1'-0"

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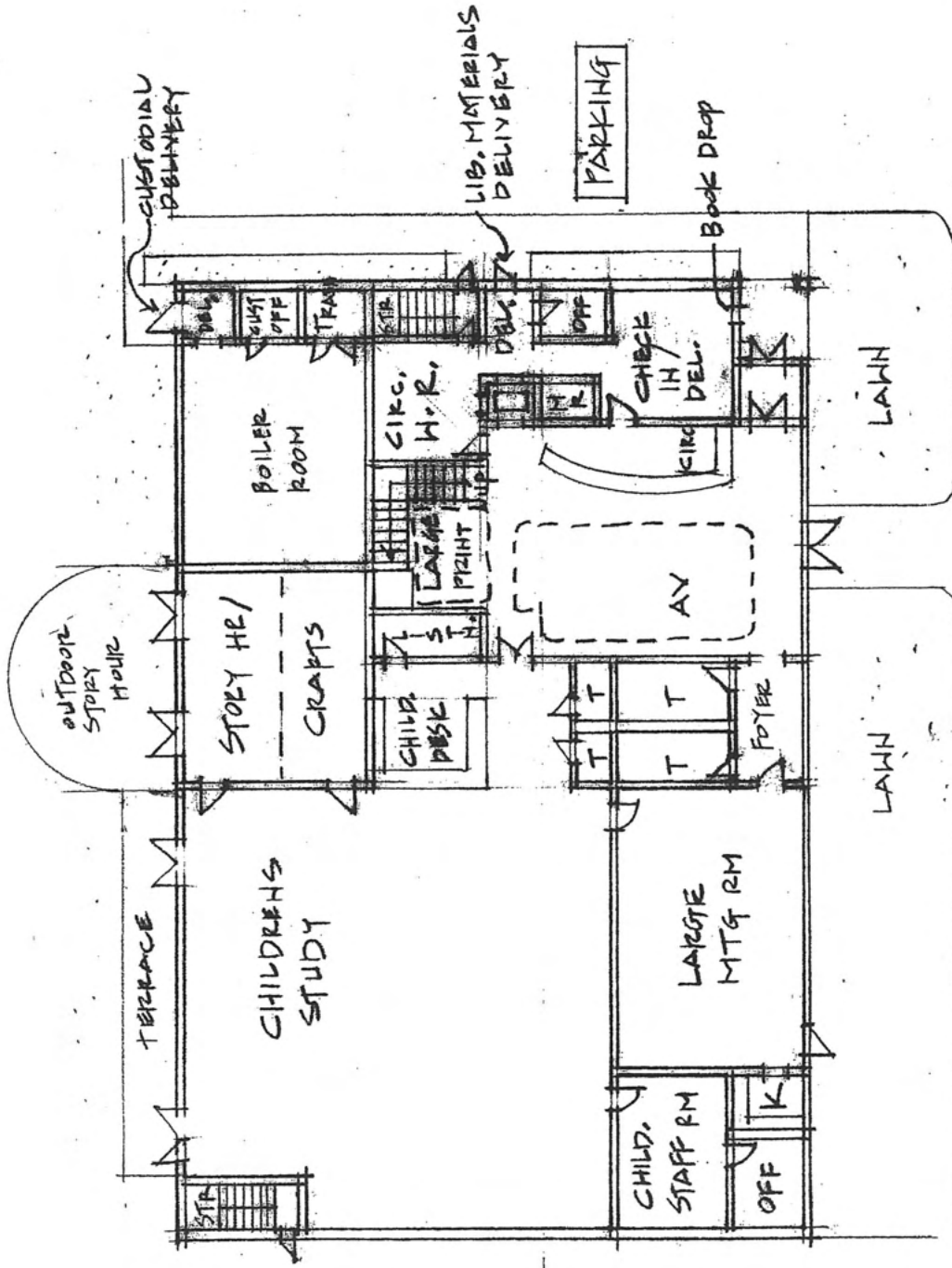


REVISED
GROUND FLOOR
9/28/00

CONCORD AVE.

SIDEWALK

DRAFT

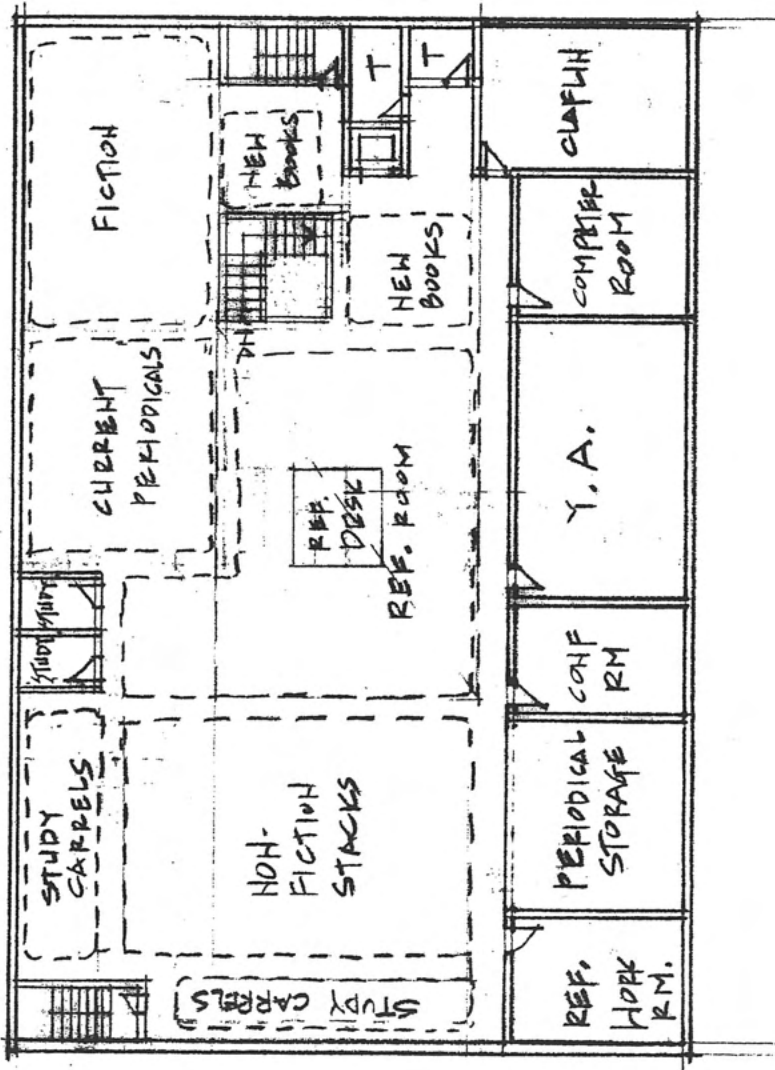


P.M.L.
PRELIM. 9/26/00

CONCORD AVE.

GROUND FLOOR

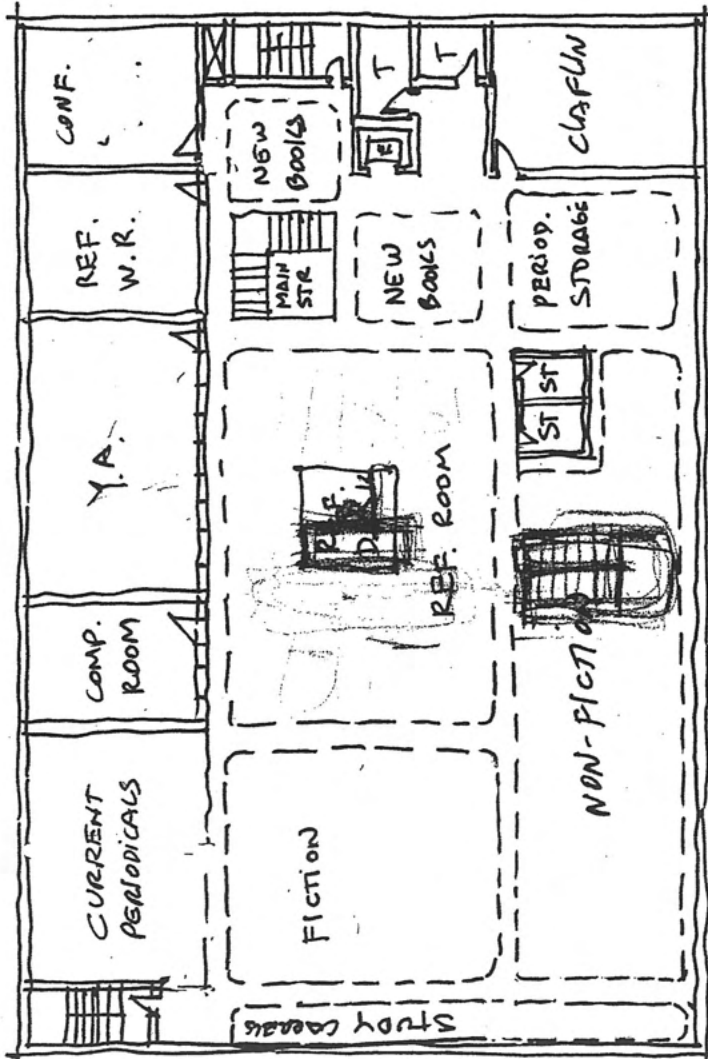
DRAFT



MAIN FLOOR

BML.
PRELIM. 9/26/00

DRAFT

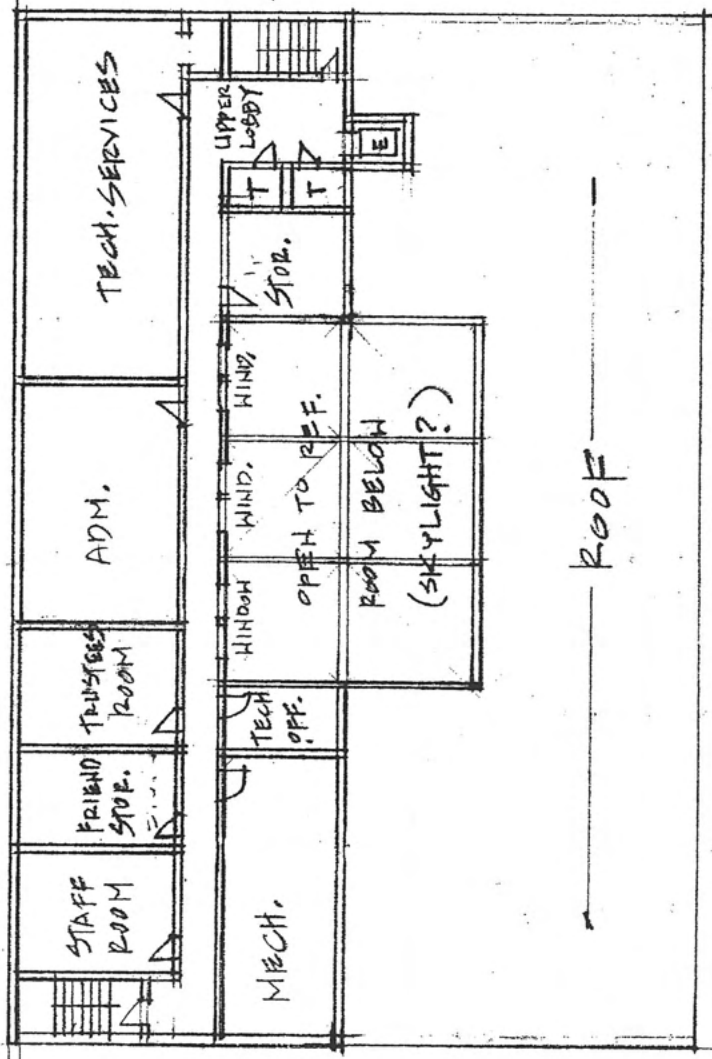


REVISED
OPTION
9/26B

B.M.L.
PRELIM 9/26/00

MAIN FLOOR
(NOTE: UPPER FLOOR
SIMILAR TO OPTION 9/26A)

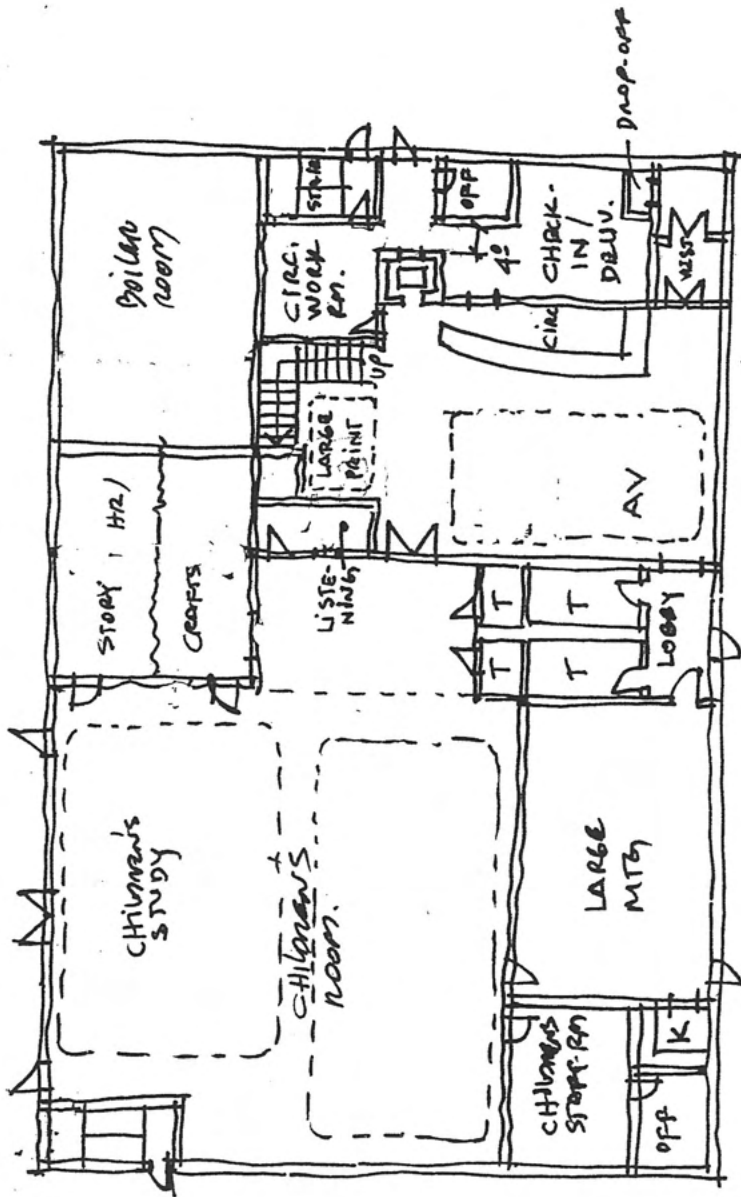
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UPPER FLOOR

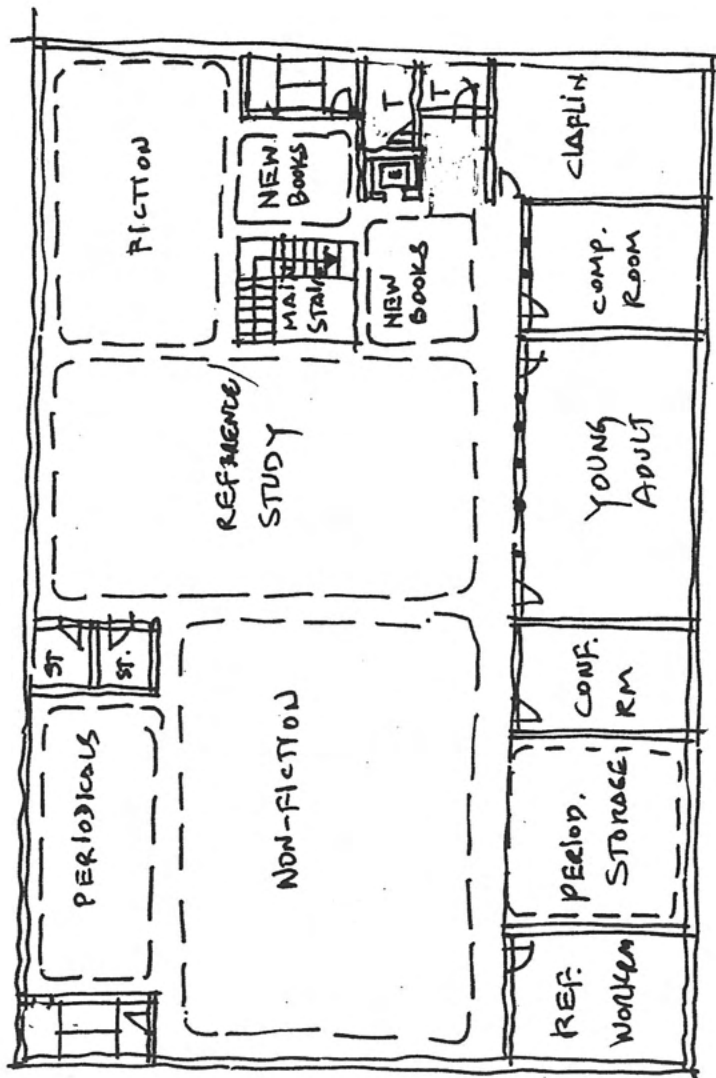
BML,
PRELIM. 9/26/00

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9/22/00
GROUND FLOOR

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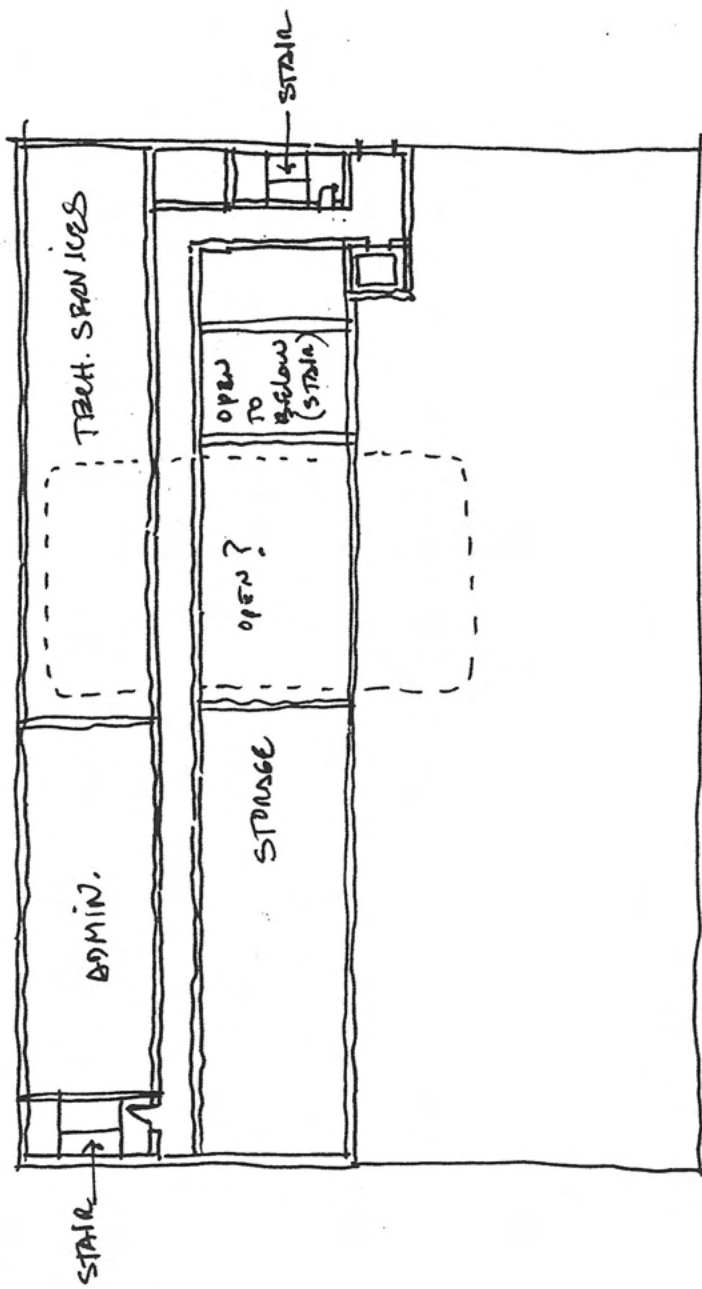


9/22/00

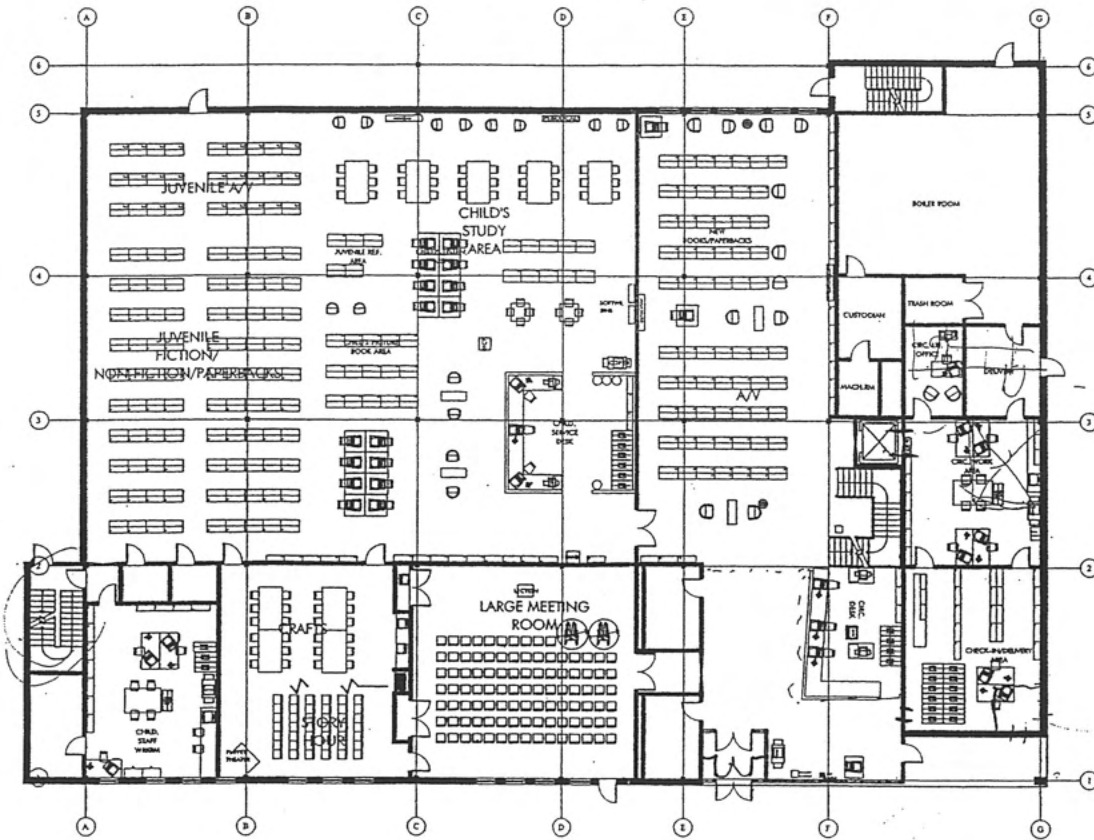
MAIN FLOOR

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9/22/00
Upper Floor

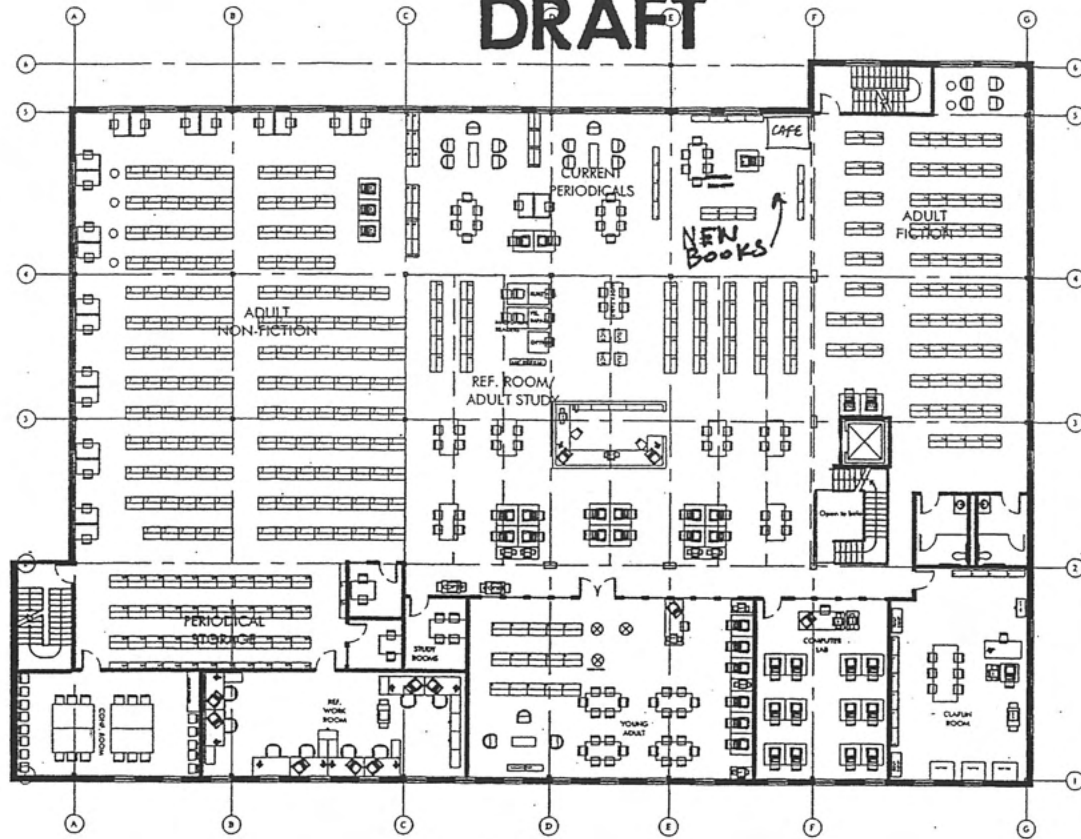


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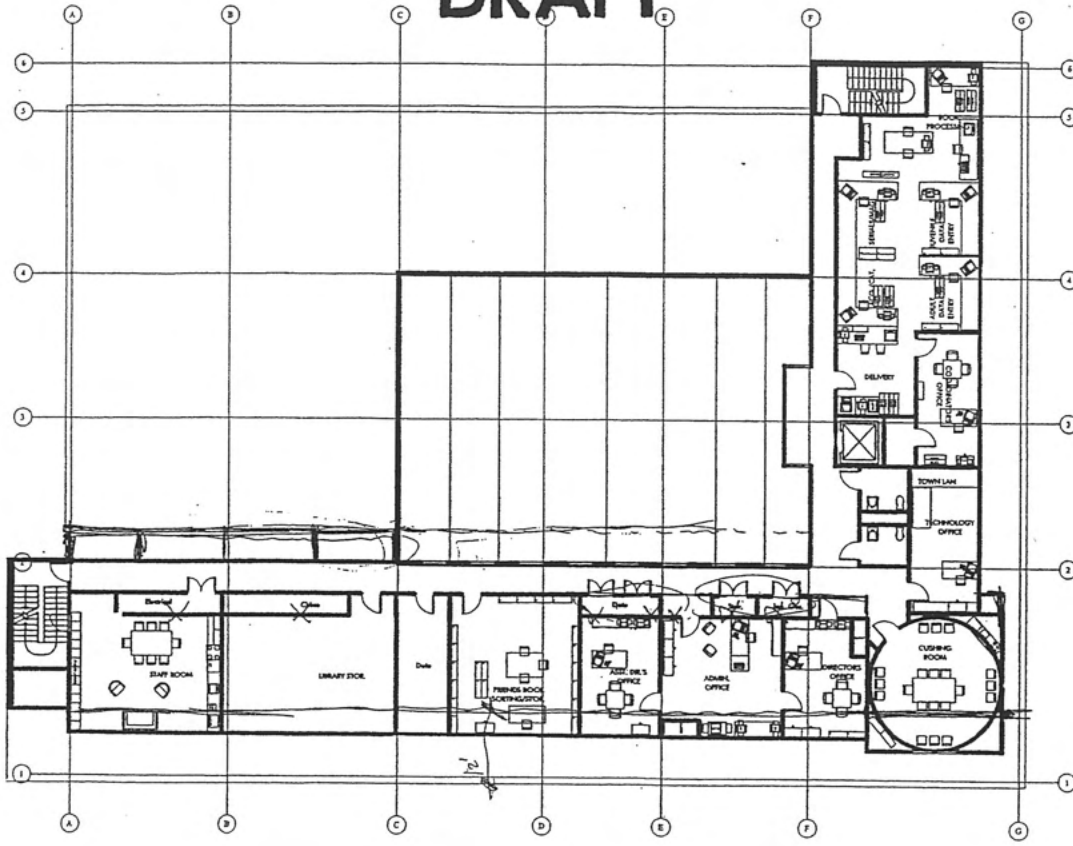
GROUND FLOOR
8/15/00

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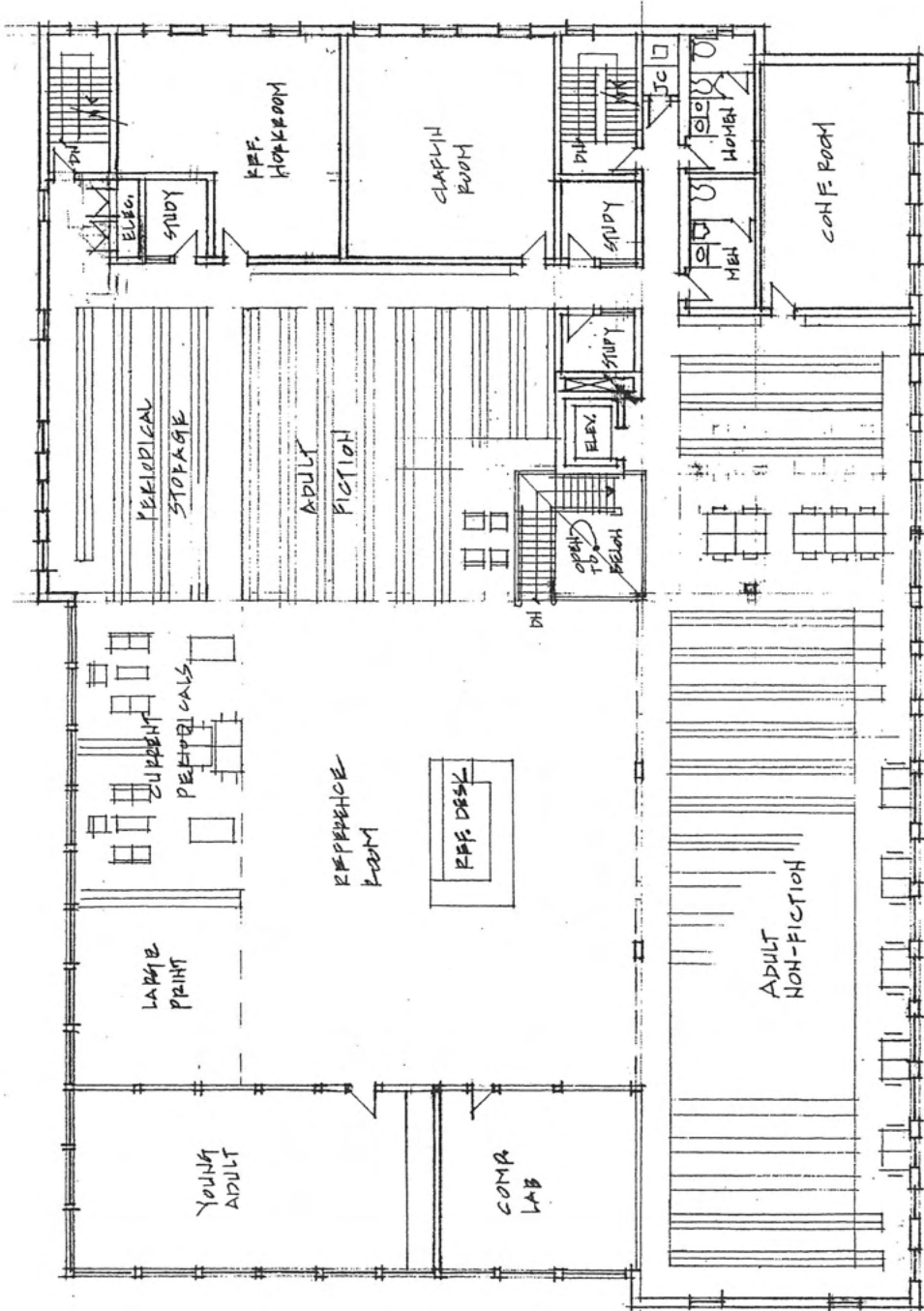
BML.
FIRST FLOOR
B/15/00

DRAFT



BML.
SECOND FLOOR
8/15/00

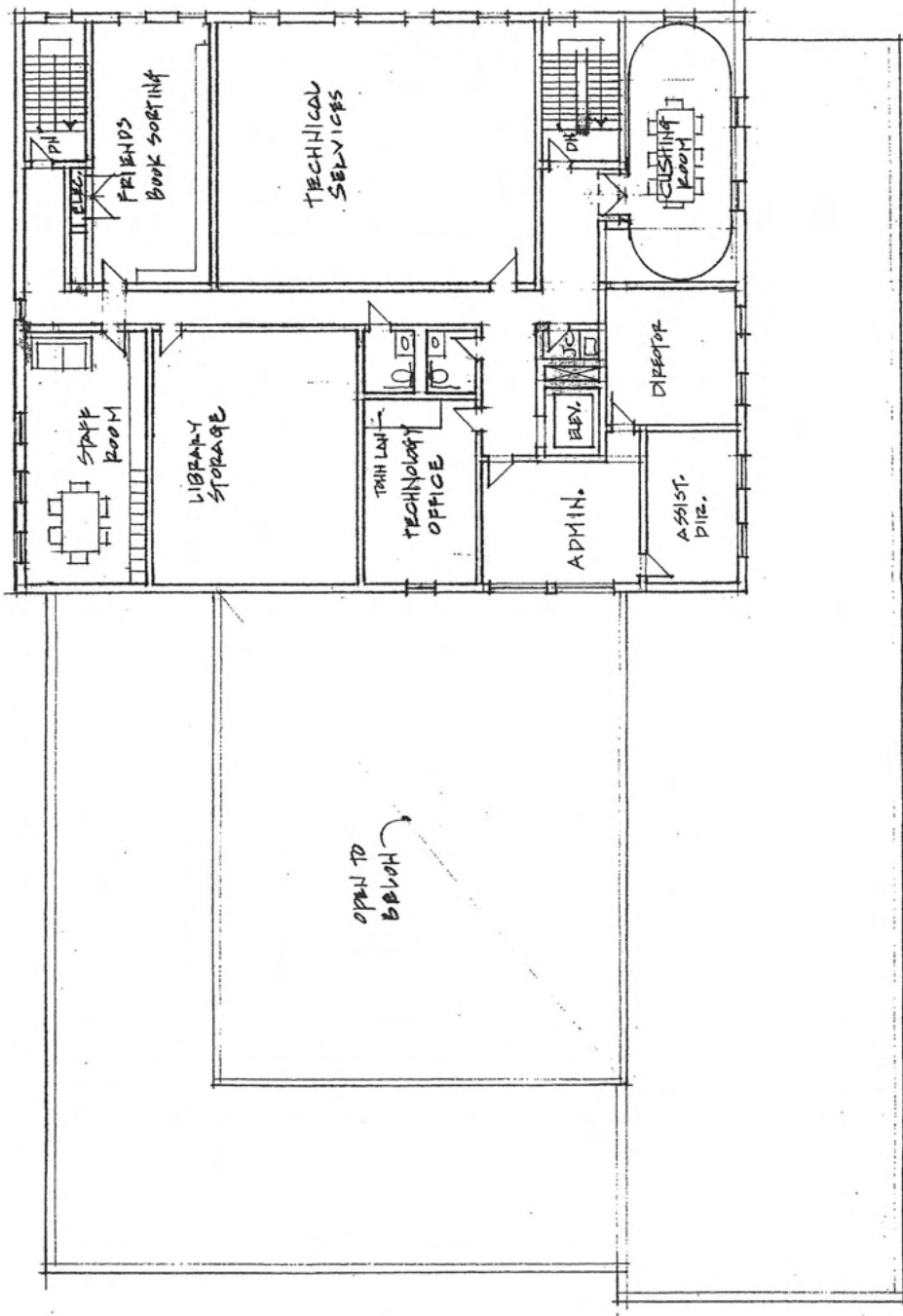
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FIRST FLOOR

BELMONT MEMORIAL LIBRARY

DRAFT



SECOND FLOOR

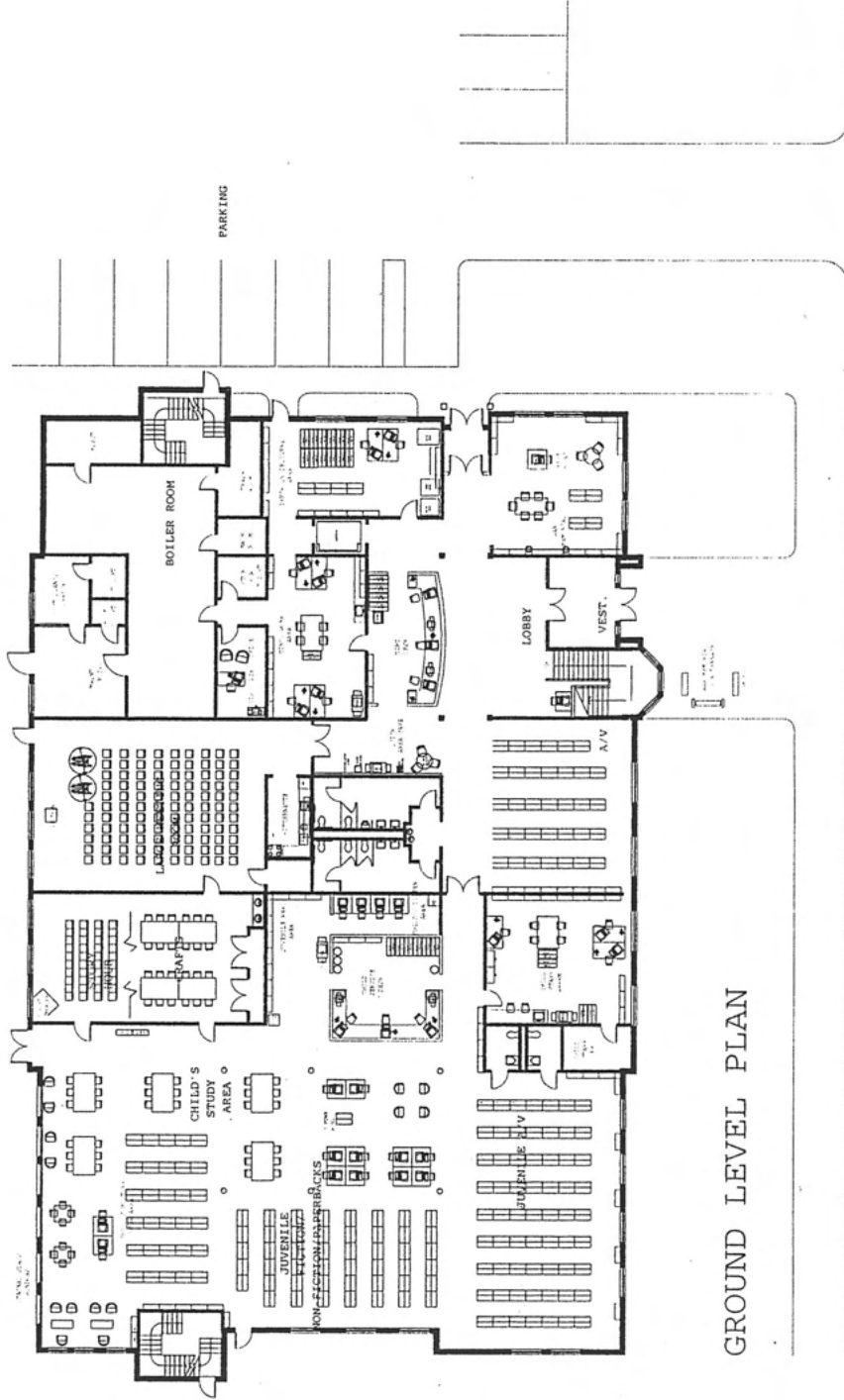
BELMONT MEMORIAL LIBRARY

DRAFT

BELMONT MEMORIAL LIBRARY
BELMONT, MA

TAPPÉ ASSOCIATES, INC.
ARCHITECTURE PLANNING

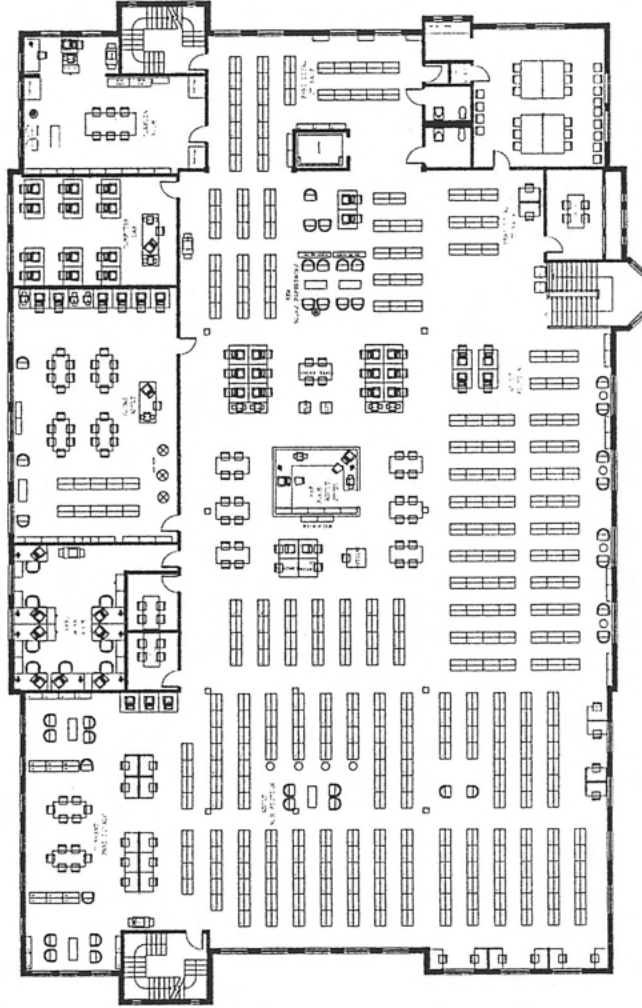
NEW BUILDING - PLANS



GROUND LEVEL PLAN

BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - PLANS



MAIN LEVEL PLAN

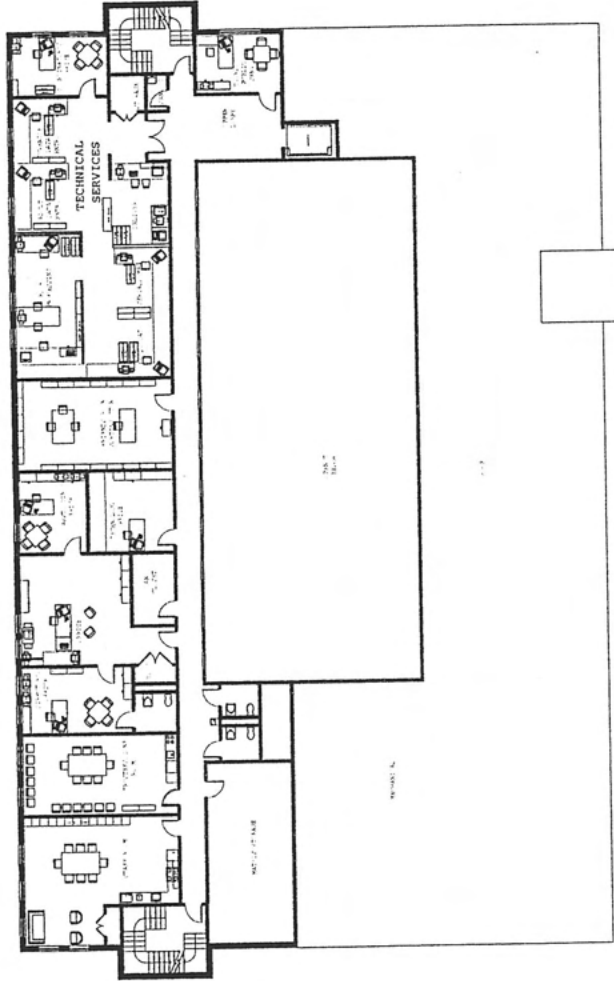
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BELMONT MEMORIAL LIBRARY
BELMONT, MA



TAPPÉ ASSOCIATES, INC.
ARCHITECTURE PLANNING

NEW BUILDING - PLANS

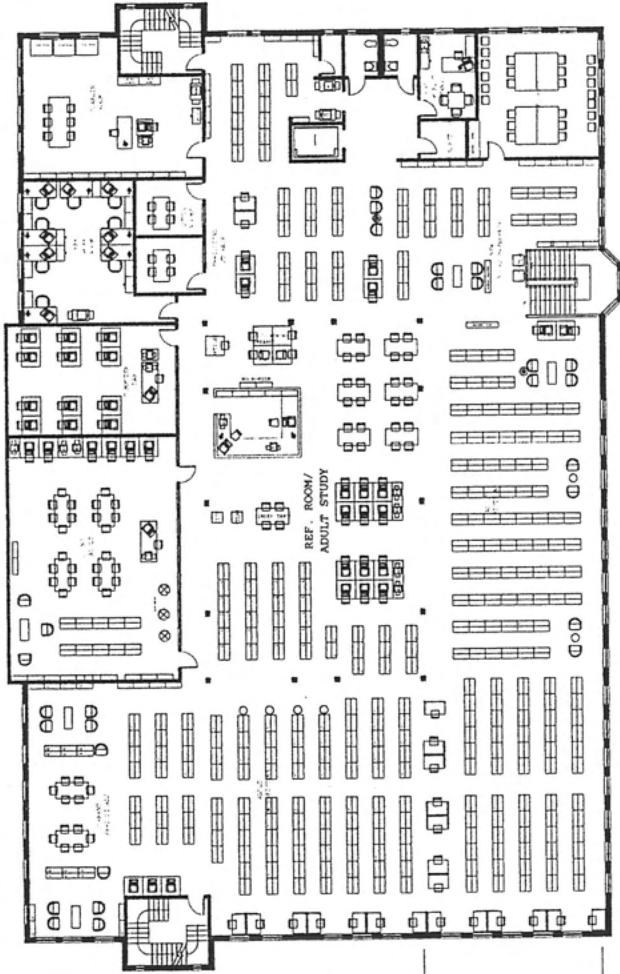


UPPER LEVEL PLAN

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BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - STREET ELEVATION



MAIN LEVEL PLAN

AREA: +/- 16,950 SF.

TAPPE ASSOCIATES, INC.
ARCHITECTURE PLANNING

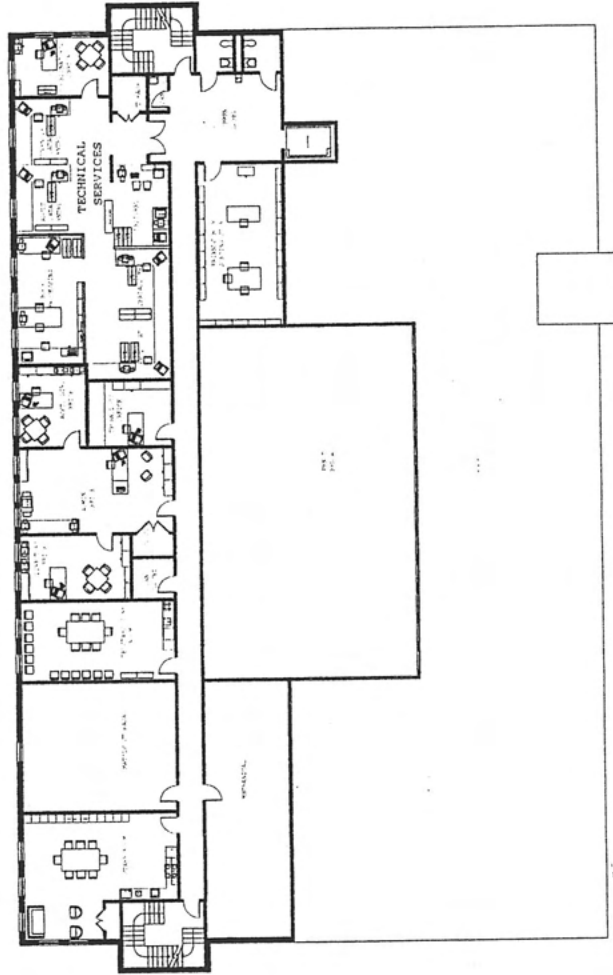


DRAFT

Plan

BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - STREET ELEVATION



UPPER LEVEL PLAN

AREA: +/- 6,750 SF.

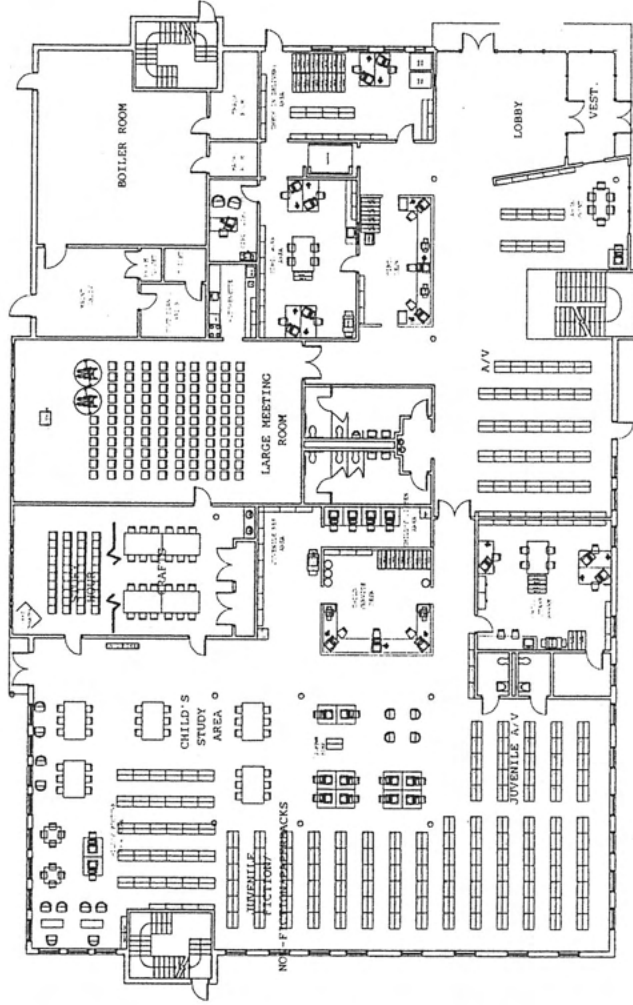


TAPPÉ ASSOCIATES, INC.
ARCHITECTS PLANNERS

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BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - FLOOR PLANS



LOWER LEVEL PLAN

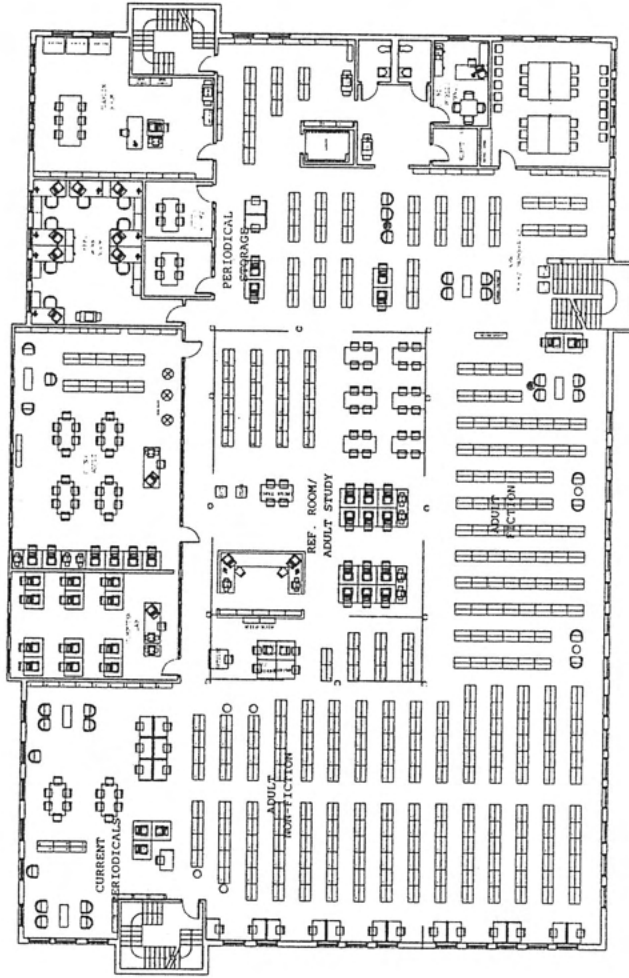
AREA: +/- 18,850 SF.

TAPPE ASSOCIATES, INC.
ARCHITECTS
P.O. BOX 1111
BOSTON, MA 02111

DRAFT

BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - FLOOR PLANS



MAIN LEVEL PLAN

AREA: +/- 18,850 SF.

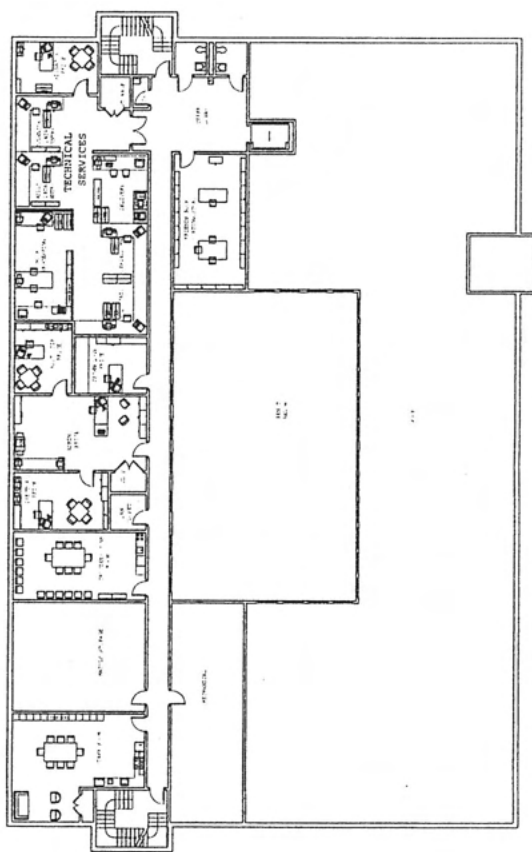


TAPPE ASSOCIATES, INC.
ARCHITECTURE PLANNING

Plan

BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - FLOOR PLANS



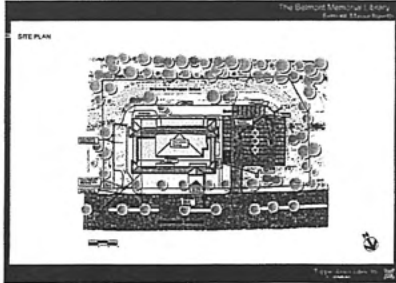
UPPER LEVEL PLAN

AREA: 77 - 5,750 SF.

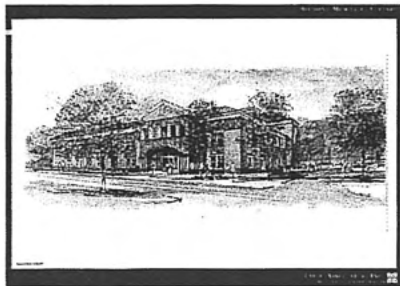
TAPPE ASSOCIATES, INC.
ARCHITECTURE PLANNING



Preferred Alternative



Site Option D offered a number of specific advantages over the other site options. The major design thrust of Option D was a clear separation of function between the building and the parking. All parking is concentrated on the west side of the property, where the majority of the parking is presently. The building is on the eastern half of the site. A designated emergency/fire lane would be created on the east side for emergency vehicles only. Although a change from the existing plan, the advantage is a clearer diagram for patrons and an opportunity for a direct garden connection from the lower level areas (Children's Library and Large Meeting Room). Although there is a minor net loss in parking spaces, it is not a significant loss compared to what would be the "required" parking for a building of this size. By accepted standards of library practice, 1 space per staff and 1 per every 2 adult seats, the number of spaces required would be upward of 113 spaces. By Belmont Zoning Code at 1 per 250 square feet of ground level plus 1 per 400 square feet of other levels, the number of spaces required would be above 130. There are 42 existing spaces; the new site plan indicates 36 parking spaces plus two designated handicapped spaces and one delivery space. After review, there would be no opportunity to expand parking to "required" levels without the acquisition of additional land. The Belmont zoning code does allow "off site" parking to be included within 400 feet of the building entrance and there is on street parking on Concord Avenue directly adjacent to the library property. The library was also encouraged to create and maintain agreements with close neighbors for shared parking areas.



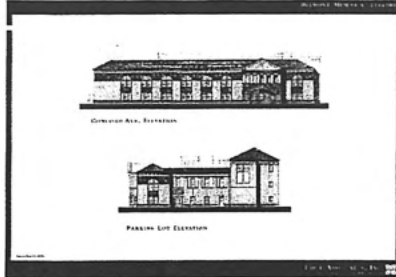
BUILDING DESIGN

Many alternatives were reviewed and fine-tuned and these are included in this study. This discussion will be limited to highlights of the Final Preferred Alternative Design.

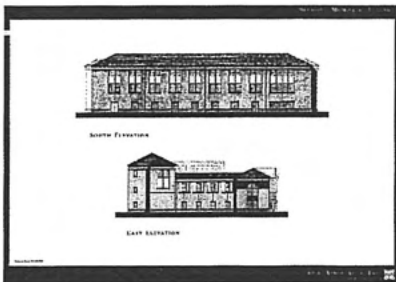
Exterior

The exterior of the new building is distinguished by the use of red brick and slate roof as major materials. To break down the scale of the building mass, it is broken down into two major pieces, a two-story front block facing Concord Avenue and a three-story piece running parallel in the rear along the garden and brook.

FEASIBILITY STUDY



The front piece is characterized by large arched windows, which carry around the three sides and are heavily glazed to reveal the library inside. The arches give the building a wonderful civic feel and at the same time soften the edges of the block and keep the façade inviting and intriguing. A heavy and wide cornice band of contrasting light and dark block wraps this portion and further reduces the scale of the elevation. A large pedimented form marks the main entrance with a shallow arch at the entry. This iconographically recalls both a temple front and an inviting and secure entry “cave”; an entry with a heavy base level entry and yet inherently expresses a promise of value on the floor above.



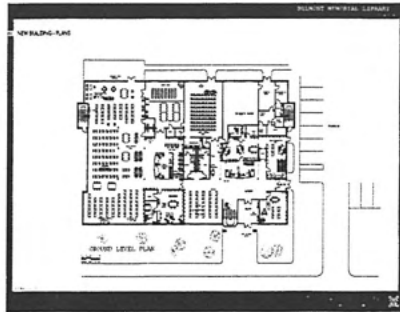
The rear block is a little plainer; the bulk of the three story red brick façade is broken up by a series of inset panels of a light block and windows. These insets break both down the scale and provide a foil for the large expanse of glazing looking out over the garden and brook, while creating a rhythm of column-like pilasters along the back elevation.

A two-story block that of the same materials is distinct from the two pieces and still, in design, connects them. The two-story scale of the piece recalls the front of the building while the design, with its insets of light block, recalls the rear.

Interior

The interior of the building design is a direct result of many meetings with the Library Director, staff and Trustees with a number of public presentations along the way for design review and input. The original design directive from the first adjacency diagram meetings is clearly distinguished in the final design.

FEASIBILITY STUDY



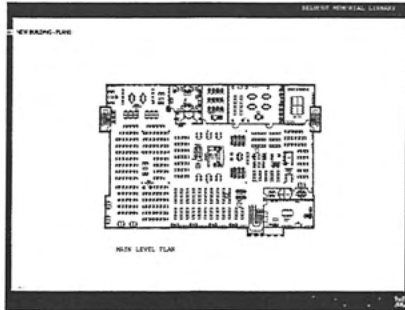
Lower Level

The ground level is entered through either the main entrance off Concord Avenue or the entry on the west side at the parking area. Both of these entries come into the building at the lobby area that is dominated by the Circulation Desk and book return areas. The Concord Avenue entry is highlighted by the War Memorial directly in the entry sequence. The large print collection is directly off the Lobby in the northwest corner. Directly across from the circulation desk, a stair rises up to the main level. Next to the stair is the audio-visual department. To the left of the lobby and past the main public toilet facilities, the Children's Library takes up most of the east side of the floor plate.

The Children's Library is organized around the main children's desk with stack and reference areas in the front half and the toddler area and the separate story time and craft area on the south side. Separate children's toilet facilities are adjacent to the desk and story room.

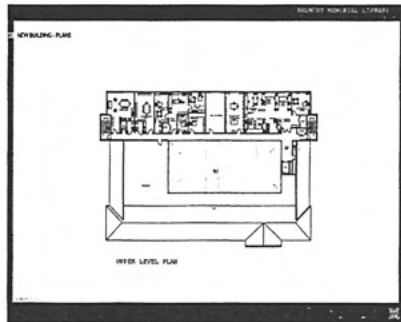
Off the main lobby area, the large meeting room is centrally located in the building between the children's library and the main maintenance areas. Sized to accommodate an occupancy of 100, this room can be made accessible for meetings after the library is closed.

FEASIBILITY STUDY



Main Level

Moving upstairs from the Lobby, the main level is inviting and open. Organized around the main information / reference desk, most of the space is defined by the stacks, arranged so that there is maximum flexibility as well as maximum supervision from the staff. The desk itself is centrally located and has full command of the floor; the central portion of the room itself is defined by a double height with clerestory windows above. The Clafin Room, managed by the Belmont Historical Society, is in a prominent location on the northwest corner over the entrance and Concord Avenue. Along the rear wall, overlooking the garden, the periodical room is in the Southeast corner, "far from the maddening crowd" and a quiet respite from the hustle and bustle. The Young Adult Area and Computer Lab are in the center, a prominent location but still supervisable by the reference desk. The Conference Room is in the southwest corner, close to the entry and also close enough to the desk and Young Adult to be used for quiet study.



Upper Level

The upper level is strictly a "staff only" level at this time. The Technical Services department commands the southwest corner, directly adjacent to the elevator for delivery and a book service. The staff lounge is at the opposite, southeast corner, far enough away to feel like a break from the workday, but close enough to be available. In between, along the south rear wall, are the administrative suite, building and friends storage and building technology support areas.

Egress and service stairs and a centrally located elevator for full-handicapped access tie all levels together.

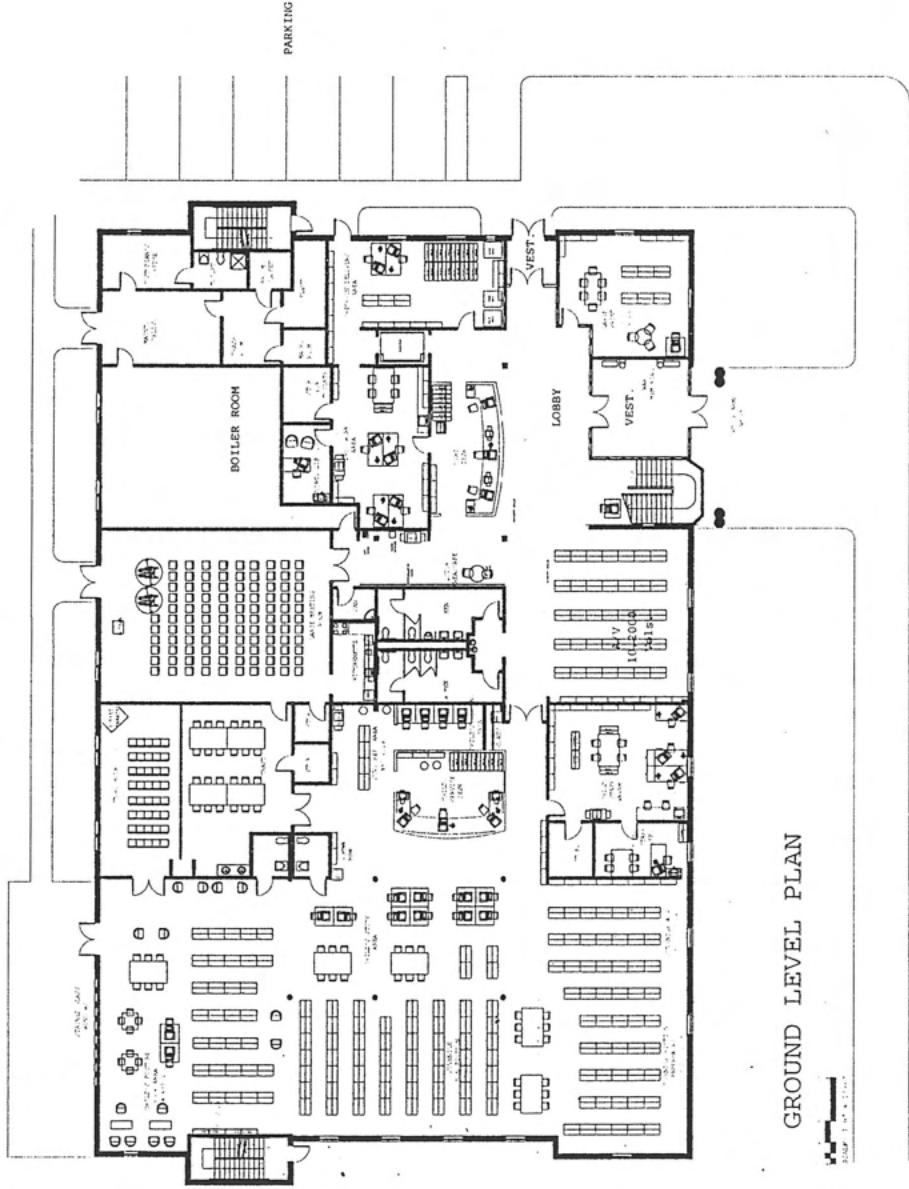
COST ESTIMATE

The Preliminary Conceptual Estimate of \$12,078,268.00 dated 12 December 2000 is the total project estimate, based upon the best professional judgement of Tappé Associates Inc. This includes a detailed construction cost estimate provided by Daedalus Projects, Inc. of \$7,842,012 plus \$488,926 for site development and \$150,000 for asbestos abatement of the existing building. A detailed breakdown of the construction cost estimate is included. The total project cost includes a project contingency of 10% and project escalation figures for two years and represents a project cost estimate for the year 2002.

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BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - PLANS



GROUND LEVEL PLAN

TAPPÉ ASSOCIATES, INC.
ARCHITECTS

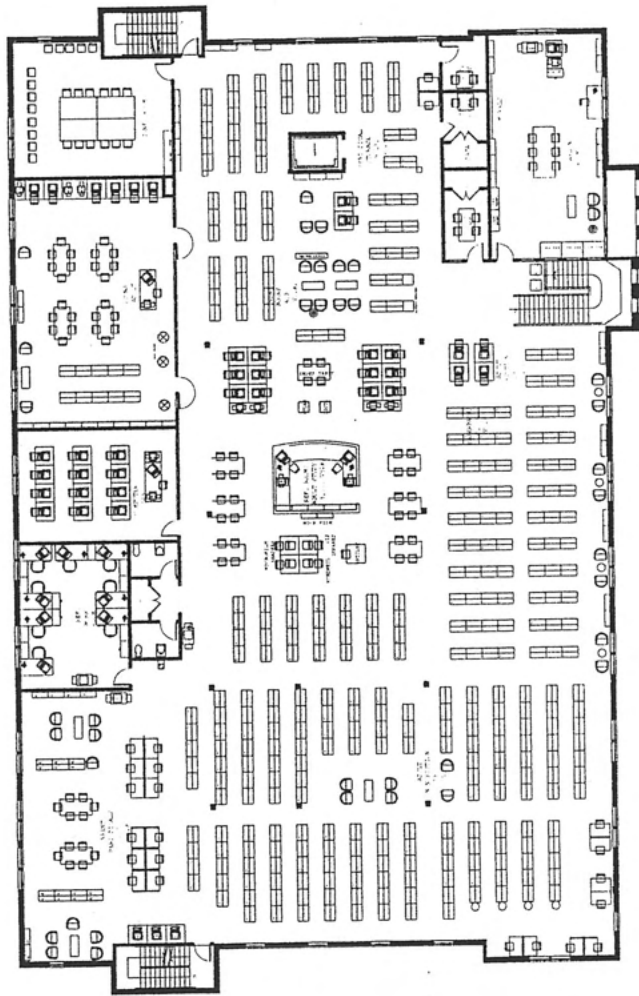


Plan

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BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - PLANS



MAIN LEVEL PLAN



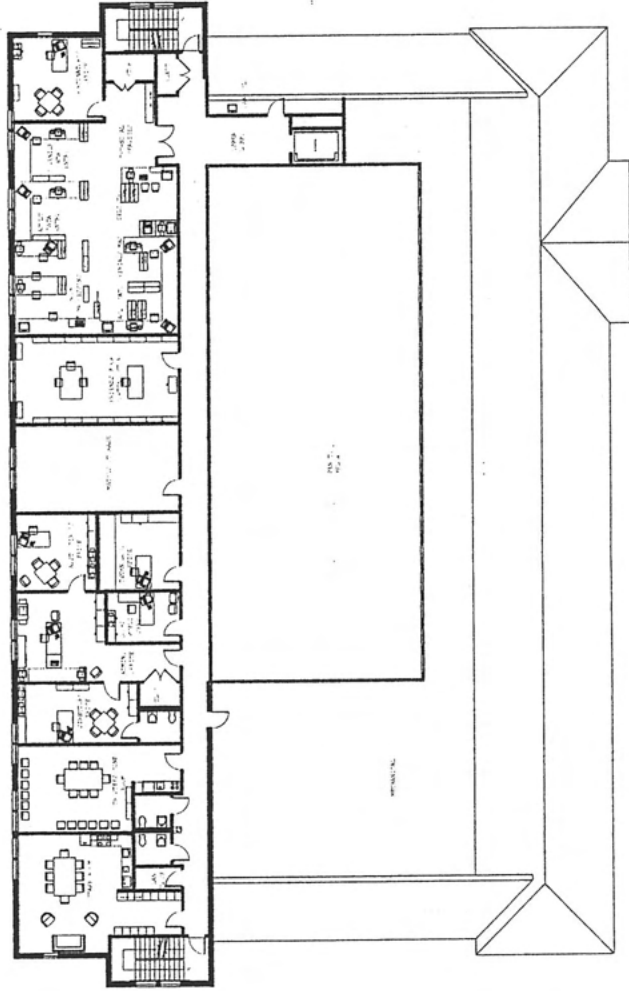
TAPPE ASSOCIATES, INC.
ARCHITECTURE PLANNING

Planning

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BELMONT MEMORIAL LIBRARY
BELMONT, MA

NEW BUILDING - PLANS

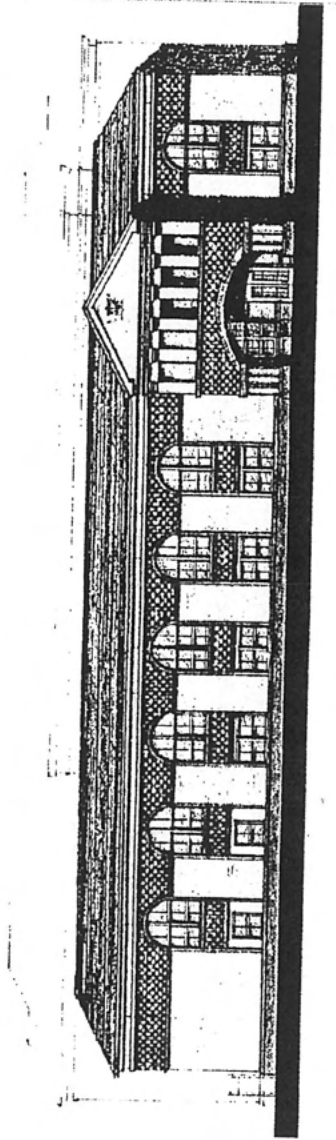


UPPER LEVEL PLAN

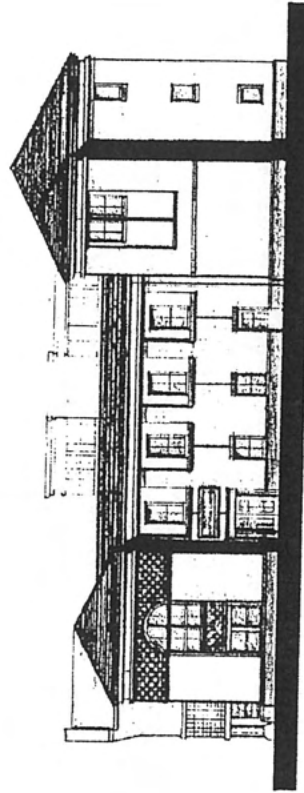


T APPÉ ASSOCIATES, INC.
ARCHITECTURE ■ PLANNING

BELMONT MEMORIAL LIBRARY
BELMONT, MA



CONCORD AVE. ELEVATION



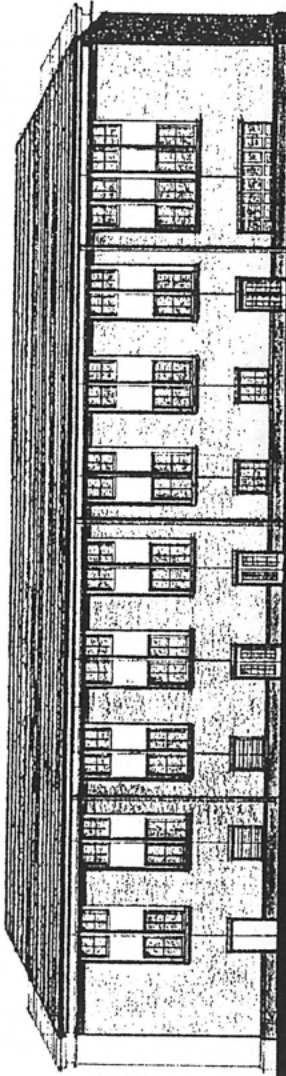
PARKING LOT ELEVATION

Release Date 12/29/00

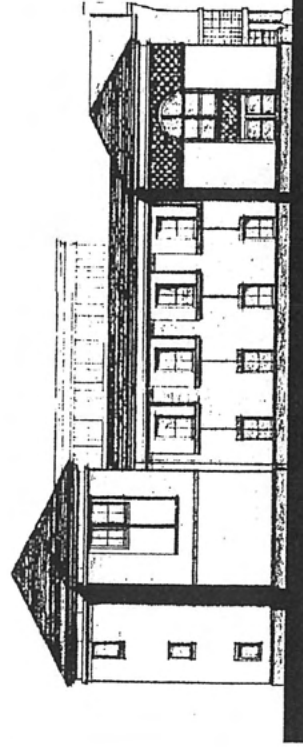


TAPPÉ ASSOCIATES, INC.
ARCHITECTURE • PLANNING • BOSTON • MA

BELMONT MEMORIAL LIBRARY
BELMONT, MA



SOUTH ELEVATION



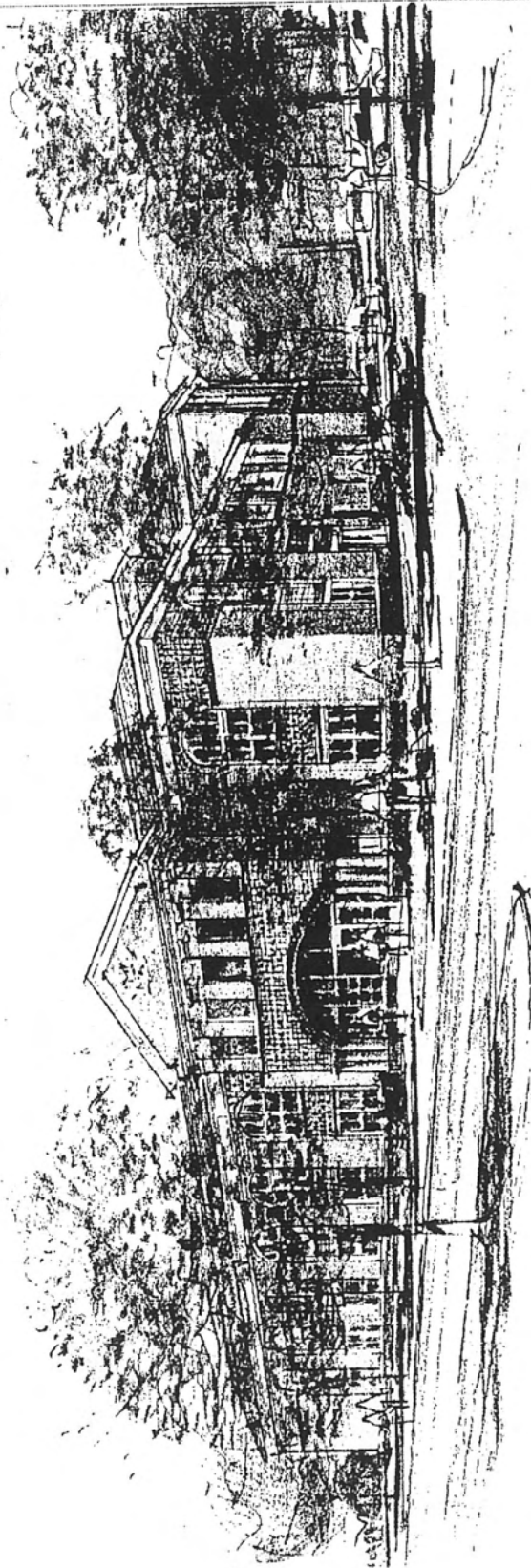
EAST ELEVATION

Release Date 12/29/00

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BELMONT MEMORIAL LIBRARY
BELMONT, MA



Release Date 1/02/01



TAPPÉ ASSOCIATES, INC.
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Belmont Memorial Library Belmont, Massachusetts

Preliminary Conceptual Estimate
12-Dec-00

New Building Item		\$12,078,268	Total
Construction			
Preliminary Construction Estimate (Daedalus Projects, Inc.)		\$7,841,012	
Site Development		\$488,926	
Asbestos Abatement (Existing Building)		\$150,000	
Subtotal		<u>\$8,479,938</u>	
Furnishings Allowance		\$400,000	
Fees Allowance			
<i>Architectural Subtotal</i>		\$695,000	
Reimbursable Expenses	Allow	\$40,000	
Furnishing Fee	Allow	\$80,000	
Peer Reviews	Allow	\$10,000	
Geotechnical Investigations, Borings & Survey	Allow	\$25,000	
Civil Engineering	Allow	\$25,000	
Landscape	Allow	\$20,000	
Subtotal Fees		<u>\$895,000</u>	
Project Expenses Allowance			
Printing	Allow	\$30,000	
Construction Testing	Allow	\$20,000	
Misc. Expenses	Allow	\$30,000	
Moving Expenses	Allow	\$25,000	
Tele/Data Installation	Allow	\$75,000	
Owner's Representative	Allow	\$100,000	
Subtotal Expenses		<u>\$280,000</u>	
Project Contingency	10.00%	\$1,005,494	
Total Preliminary Budget Estimate of Probable Project Cost (Current Dollars)		\$11,060,432	
Project Escalation			
<i>Project Escalation - 12 Months - 2001</i>	4.50%	\$497,719	
Subtotal (2001)		\$11,558,151	
<i>Project Escalation - 12 Months - 2002</i>	4.50%	\$520,117	
Total Preliminary Budget Estimate of Probable Project Cost		\$12,078,268	

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Belmont Memorial Library
Belmont, Massachusetts

Preliminary Conceptual Estimate
13-Dec-00

New Building Total \$12,492,897

Item	Elegible	Non-elegible	Total
Construction Estimate (Daedalus Projects, Inc.)			
1.0 General Requirements, OH & P	\$891,879		
2.1a Site Work, excluding Landscaping	\$629,348		
3. Concrete	\$280,964		
4. Masonry	\$609,013		
5. Metals	\$1,009,151		
6. Wood & Plastics	\$282,300		
7. Moisture-Thermal Control	\$481,006		
8. Doors, Windows & Glass	\$602,360		
9. Finishes	\$649,375		
10. Specialties	\$106,370		
11. Fixed Equipment	\$166,270		
14. Conveying Systems	\$80,000		
15.3 Fire Protection	\$115,000		
15.4 Plumbing	\$102,500		
15.6 HVAC	\$828,000		
16.1 Electrical except Data	\$759,000		
16.2 Data/Communications wiring	\$56,000		
Other - a. (attach explanation)			
Design contingency	\$675,666		
Construction Contingency	\$416,210		
Escalation to (date) January, 2003	\$804,118		
Page Subtotal: Total Construction Cost	\$9,544,529		

Fees and Expenses Allowances

Study		\$45,000	
Documents Subtotal		\$695,000	
<i>Architectural Subtotal</i>		<u>\$740,000</u>	
Reimbursable Expenses	Allow	\$40,000	
Furnishing Fee	Allow	\$80,000	
Peer Reviews Fee	Allow	\$10,000	
Geotechnical Investigations, Borings & Survey Fee	Allow	\$25,000	
Civil Engineering Fee	Allow	\$25,000	
Landscape Fee	Allow	\$20,000	
Tele/Data Design Fee	Allow	\$10,000	
Printing	Allow	\$30,000	
Construction Testing	Allow	\$20,000	
Misc. Expenses	Allow	\$30,000	

Subtotal Fees and Expenses \$1,030,000

Construction - Administration Cost \$100,000 Allow

Furnishings Allowance

12.1 Steel shelving and metal end panels	\$250,000		
12.2 All other furnishings	\$325,000	\$325,000	
2.1b Landscape & paving	\$82,650	\$82,650	

Project Contingency

\$1,135,718

Land purchase or value of gift land (give date and append documents)	\$0		
Other - b (attach explanation)	\$0		

Moving	\$25,000		
Temporary Quarters	\$0		

Grandtotal \$12,060,247 \$432,650 \$12,492,897

Reimbursement Formula:

1st \$1,200,000	60%	\$720,000
\$ 1,200,000 to \$3,000,000	40%	\$720,000
\$3,000,000 to \$6,000,000	30%	\$900,000
Above \$6,000,000	20%	\$1,212,049

STATE REIMBURSEMENT TOTAL: \$3,552,049

Cost to Municipality \$8,940,848

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**Belmont Memorial Library
New Construction**

Conceptual Estimate
Belmont, MA

December 4, 2000

Daedalus Projects Inc.
112 South Street
Boston, MA 02111
(617) 451-2717

Tappe Associates Inc.
Six Edgerly Place
Boston, MA 02116
(617) 451-0200

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Belmont Memorial Library
Belmont, MA

December 4, 2000
Conceptual Estimate

TABLE OF CONTENTS

Introduction	1
Main Summary	3
Sitework	4
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Belmont Memorial Library
Belmont, MA

December 4, 2000
Conceptual Estimate

INTRODUCTION

The following estimate is based upon Conceptual drawings from Tappe Associates, Inc.

The following assumptions have been made.

- The project will be publicly bid.
- Prices are based current 2000 dollars.

The following items are not included in the estimate:

- Design fees and other soft costs.
- Construction contingency (for change orders).
- Escalation.
- Construction of temporary facilities.
- Moving and storage expense.
- Loose furnishings, fixtures and equipment.
- Hazardous waste removal from existing building.

Markups:

- The General Conditions, Overhead and Profit (G.C.O. & P.) have been included at 11%.
- Design Contingency of has been included at 10%.

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Belmont Memorial Library
Belmont, MA

December 4, 2000
Conceptual Estimate

MAIN SUMMARY

ELEMENT	TOTAL	GSP	COST/SF
Sitework	\$488,926		
New Construction	\$7,841,012	46,000 SF	\$170.46
SUBTOTAL	\$8,329,938	46,000 GSF	\$181.09
Escalation (0%)		46,000 GSF	
TOTAL	\$8,329,938	46,000 GSF	\$181.09

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Belmont Memorial Library
 Sitework
 Belmont, MA

December 4, 2000
 Conceptual Estimate

ELEMENT	QUANTITY	UNIT	UNIT RATE	COST
02A-SITework				
Remove paving	2,580	SY	3.25	\$8,385
Remove sidewalks	4,915	SF	0.45	\$2,212
Remove curbs	1	LS	15,000.00	\$15,000
Demolish stairs	1	LS	3,500.00	\$3,500
Miscellaneous demolition	1	LS	15,000.00	\$15,000
Sawcut paving	65	LF	3.75	\$244
Site preparation	1	LS	5,000.00	\$5,000
Rough and fine grading	1,740	SY	1.75	\$3,045
Erosion control and haybales	1	LS	12,000.00	\$12,000
Bituminous parking paving	1,740	SY	17.00	\$29,580
Curbs	938	LF	25.00	\$23,450
Walkways	1	LS	20,000.00	\$20,000
Curb cuts	4	EA	250.00	\$1,000
Site utilities	1	LS	200,000.00	\$200,000
Septic system				NIC
Detention				NIC
Site improvements	1	LS	25,000.00	\$25,000
Planting	1	LS	20,000.00	\$20,000
Loam and seed	1	LS	7,500.00	\$7,500
Parking spaces	38	EA	15.00	\$570
Allow for handicap space markings	2	EA	35.00	\$70
HC parking space signage	2	EA	150.00	\$300
Sign	1	EA	5,000.00	\$5,000
Sitework Subtotal				\$396,856
Design Contingency (10%)				\$39,686
Subtotal				\$436,541
General Conditions Overhead & Profit (12%)				\$52,385
TOTAL				\$488,926

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Belmont Memorial Library
New Construction
Belmont, MA

December 4, 2000
Conceptual Estimate
46,000 GSF

MAIN SUMMARY

ELEMENT	COST	COST/SF	
02B-BUILDING SITEWORK	\$265,142	\$5.76	
03-CONCRETE	\$280,964	\$6.11	
04-MASONRY	\$609,013	\$13.24	
05-METALS	\$1,009,151	\$21.94	
06-CARPENTRY	\$282,300	\$6.14	
07-THERMAL & MOISTURE PROTECTION	\$481,006	\$10.46	
08-DOORS & WINDOWS	\$602,360	\$13.09	
09-FINISHES	\$649,375	\$14.12	
10-SPECIALTIES	\$106,370	\$2.31	
11-EQUIPMENT	\$48,600	\$1.06	
12-FURNISHINGS	\$145,677	\$3.17	
14-CONVEYING SYSTEMS	\$80,000	\$1.74	
15-MECHANICAL	\$1,045,500	\$22.73	
16-ELECTRICAL	\$759,000	\$16.50	
	Subtotal	\$6,364,458	\$138.36
	Design Contingency (10%)	\$636,446	\$13.84
	Subtotal	\$7,000,904	\$152.19
	General Conditions Overhead & Profit (12%)	\$840,108	\$18.26
	TOTAL	\$7,841,012	\$170.46

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Belmont Memorial Library

Belmont, MA



FEASIBILITY STUDY

March 2001

APPENDIX 1 Program Element Descriptions and Diagrams

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BUILDING PROGRAM

Belmont Memorial Library

SUMMARY

Space Needs and Feasibility Study

Area Designation	Existing		Projected					
	Volumes	Area	Volumes	Patron Seats	Staff Seats	Other Seats	PAC Stns	Area
Entrance								
Entrance/Vestibule		96						200
Main Lobby		330						700
Gallery								
Quick Area / Café				6				200
Entrance Sub-Totals		426		6				1,100
Circulation								
Circulation Desk		190	500		3			232
Checkin/Delivery Area			3,000		3			320
Circulation Work Area			1,000		4			372
Circulation Librarian's Office			60	2	1			120
Drive-thru								
Circulation Sub-Totals		190	4,560	2	11			1,044
Adult Services								
New Books	5,811		6,500	11			2	1,077
Audio/Video Collection	875		10,200				1	742
Adult Fiction Stacks	17,941		23,000	4			2	1,240

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BUILDING PROGRAM

Belmont Memorial Library

SUMMARY

Space Needs and Feasibility Study

Area Designation	Existing		Projected					
	Volumes	Area	Volumes	Patron Seats	Staff Seats	Other Seats	PAC Stns	Area
Adult Non-fiction Stacks	53,475		55,000	20			3	3,285
Periodicals - Current	237		237	22				1,052
Large Print	1,706		2,000	6			1	330
Paperback books	4,200		5,000					180
Periodicals - Storage	12,256		9,252	4				700
Adult Services Sub-Totals	96501		111,189	67			9	8,606

Reference

Reference Room/Adult Study	5,082		5,000	28		5	12	2,700
Young Adult Room	3,700		6,100	27	1		6	1,516
Local History / Claflin Room	655	610	1,200	6	2			750
Computer Lab						1	12	650
Study Rooms				8				250
Reference Work Room						8		520
Coordinator of Public Services				4	1			180
Reference Sub-Totals	9437	610	12,300	73	13	5	30	6,566

Children's Services

Children's Service Desk		140				3		434
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BUILDING PROGRAM

Belmont Memorial Library

SUMMARY

Space Needs and Feasibility Study

Area Designation	Existing		Projected					Area
	Volumes	Area	Volumes	Patron Seats	Staff Seats	Other Seats	PAC Stns	
Children's Staff Workroom			2,500	4	3	2		600
Children's Storage								100
Children's Services Office					1	4		180
Children's Picture Book Area	8,635		8,635	8		6	2	1,000
Children's Study Area				38			10	2,200
Children's Periodicals	30		30					30
Children's Listening Area							4	160
Juvenile Audio Visual			5,000					428
Juvenile Reference Area	1,008		650					65
Juvenile Fict, Non Fict & PB	19,733		28,105					2,014
Story Hour & Craft				24		40		1,008
Children's Toilet		90						150
Children's Sub-Totals	29406	230	44,920	74	7	52	16	8,369

Administrative Services

Director's Office			75		1	4		242
Assistant Director's Office			50		1	4		180

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BUILDING PROGRAM

Belmont Memorial Library

SUMMARY

Space Needs and Feasibility Study

Area Designation	Existing		Projected					Area
	Volumes	Area	Volumes	Patron Seats	Staff Seats	Other Seats	PAC Stns	
Administration Office			25		1	2		275
Administrative Sub-Totals			150		3	10		697

Technical Services

Delivery					2			180
Serials/Magazines			300		1			120
Acquisitions/Cataloging			300		1			120
Book Processing					4			200
Data-Entry A/YA			600		1			120
Data-Entry Juvenile			600		1			120
Coordinator					1	4		180
Tech Services Storage								100
Technical Sub-Totals			1,800		11	4		1,140

Public Meeting

Trustees / Conference Room			100	8		12		329
Large Meeting Room		1,160				100		1,440
Kitchenette		96						120
Conference Room		513				25		520

Entrance

Area Designation : Entrance/Vestibule

Functions Performed : Clearly locates entry for patrons arriving from parking or sidewalk. Distinguishes library entry from meeting space, receiving, and emergency access

Proximity to : Parking, Circulation

Distance from : Quiet Study Areas

Area : 200

Collection Size :

Access :

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Architectural Features : Prominent from street and parking. Integral part of site design and interior layout. Incorporates signage that indicates hours and advertises events. Accessible by handicapped people, children, and elderly. Doors are easily accessible as is a fire rated book drop. After hours video and book drop should be drive up if possible, incorporates safe location for patron pick-up and drop off. Near Handicapped accessible parking.

Illumination :

Acoustics/HVAC :

Security :

Electrical/

Telecommunications :

Furnishings & Equipment : Automatic Double Doors
Benches
Bookdrop
Signage
 Identification
 Direction to other entry
 Information

Shelf Height
Vol per LF
Stack Units

Entrance

Space Needs and Feasibility Study

Area Designation : Main Lobby
Functions Performed : Primary orientation point; Place to set up movable exhibits

Area requirements subsumed in circulation and card catalogue

Proximity to : Parking; Circulation Desk; Elevator; Browsing Area;
Children's Library; Auditorium; Toilets

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Distance from : Quiet study areas

Area : 700

Collection Size :

Access : Public

Architectural Features : Main orientation point for the Library - good signage is essential; Bulletin board(s) listing upcoming events; Air lock inside front door; Helpful Signage; Entrance separated from circ. Desk near book detection system. Durable flooring. Inviting decor. Picture rails throughout. Bulletin board in alcove with a copier and fax.

Illumination : Indirect lighting, well lighted interior and exterior

Acoustics/HVAC : Sound-deadening materials; Standard systems

Security : Standard systems and book theft detection system (unobtrusive)

Electrical/ Book Security System

Telecommunications :

Furnishings & Equipment : Bulletin Boards
Display Case
Pamphlet racks
Water fountain

Shelf Height
Vol per LF
Stack Units

Entrance

Area Designation : Gallery
Functions Performed : Hanging of Local Artists' Work

Proximity to : Adult collection, high traffic areas

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Distance from :

Area :

Collection Size :

Access : Public

Architectural Features : Adjustable Lighting, Picture rails throughout. two (2) 12 foot walls

Illumination :

Acoustics/HVAC :

Security :

Electrical/
Telecommunications :

Furnishings & Equipment :

Shelf Height
Vol per LF
Stack Units

Entrance

Space Needs and Feasibility Study

Area Designation : Quick Area / Café

Functions Performed : Quick copy area, public telephone, e-mail check, change and self checkout, patron service and waiting and Concession area for long hour library patrons.

Proximity to : Main Entrance; Circulation, Circulation Workroom; New Books/ Browsing/Audio Visual; Photocopier; Public toilets?; Card catalog (PACs); Staff/Service elevator

Distance from : Quiet areas; Children's Room; Pay Phones; Meeting Rooms; Public toilets?

Area : 200

Collection Size :

Access : Public

Seating:

Carrel

Table 6

Lounge

Other

Pac

Staff

Architectural Features : Sound proofing, aesthetically pleasing, natural light. Adjustable Lighting, Picture rails throughout

Illumination : Windows and open/natural light; Full spectrum, energy efficient lighting; Task lighting; No glare on the computers.

Acoustics/HVAC : Sound deadening material required particularly for telephone. Standard systems; Allow for temperature adjustment and air circulation
Easily cleaned but sound deadening café areas. Well vented for food smells

Security : Standard systems; As much a view as possible towards the rest of the Library. View of restrooms, drinking fountain, entry to meeting rooms, and phone

Electrical/ Telephone

Telecommunications : Extra Duplex electrical outlets
PC/PAC on Desk
book self checkout system
Laser and receipt printers

Furnishings & Equipment : 1 PC, 1 photocopier, money change machine, self checkout unit, pay telephone
2 small tables; 6 cafe chairs

Shelf Height 6

Vol per LF 8

Stack Units 0

Circulation

Space Needs and Feasibility Study

Area Designation : Circulation Desk

Functions Performed : Charging out of materials, patron registration. Preparation and housing of reserve or hold materials. Library information. Fine collecting. Patron service and waiting.

Proximity to : Main Entrance; Circulation Workroom; New Books/
Browsing/Audio Visual; Photocopier; Staff/Service elevator

Seating:

Carrel

Distance from : Quiet areas; Children's Room; Pay Phones; Meeting
Rooms

Table

Lounge

Other

Area : 232

Pac

Collection Size : 500 Volumes

Staff 3

Access : Public

Architectural Features : As a major component of the Library, desk should be centrally located with as much of a view of the rest of the library as possible. Counters should be non porous and accommodate the heights of both adults and children, and persons in wheelchairs. Space behind should accommodate reserve shelving, some library activities. Provide gym flooring behind the desk. No thresholds throughout.

Illumination : Windows and open/natural light; Full spectrum, energy efficient lighting; Task lighting; No glare on the computers.

Acoustics/HVAC : Sound deadening material required particularly for telephone. Standard systems; Allow for temperature adjustment and air circulation. Ceiling Fan?

Security : Standard systems; As much a view as possible towards the rest of the Library. View of restrooms, drinking fountain, entry to meeting rooms, and phone

Electrical/ Telephone Console and 2nd phone.

Telecommunications : Extra Duplex electrical outlets
2 security de-sensitizers
Copier

Furnishings & Equipment : 3 Chairs
3 computers w/ Laser and receipt
printers; Shelving for reserves
Storage for supplies in desk
4 booktrucks
Clock
nonporous counter
2 unlockers for security cases
Copier

Shelf Height 6

Vol per LF 8

Stack Units 3

Circulation

Space Needs and Feasibility Study

Area Designation : Checkin/Delivery Area

Functions Performed : Check-in of returned materials; Dealing with Network Transfers; Packaging materials for Delivery System; Inspection of AV; Redirecting Materials; Metrowest Deliveries; Included should be a fire-rated interior Book Drop from exterior with (1) book slot and (1) media slot.

Proximity to : Circulation Desk, receiving door, Circ Workroom;
Staff/Service elevator

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 3

Distance from :

Area : 320

Collection Size : 3,000 Volumes

Access : Staff

Architectural Features : Direct access to circulation desk/workroom; 2 return slots: books and video, with depressable bins; 2 work stations as well as plenty of counterspace and storage for flexible working of various staff. Storage space for supplies. Easy path receiving to workspace. Space for maneuvering booktrucks. Separate entry desired for book delivery.

Illumination : Full-spectrum, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ 2 PC Computer with lasers and receipt printers

Telecommunications : Power/Data/Tele outlets
Phone
2 security sensitizers

Furnishings & Equipment : 2 Work stations; Counter; Cabinet storage; 12 Booktrucks; Deep Shelves (7 shelf); Bulletin Board; Shelving; 4 depressable bins, Metrowest delivery bins storage space; Delivery Bins for Children's and Branches

Shelf Height 7

Vol per LF 8

Stack Units 18

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BUILDING PROGRAM

Belmont Memorial Library

Circulation

Space Needs and Feasibility Study

Area Designation : Circulation Work Area

Functions Performed : Support for Circulation Desk operations; Circulation projects and displays; Send item list and network transfers; Data input (Registrations, etc.); Mail; Reserve verification and notification

Proximity to : Main Entrance, Circulation Desk, Check-in Delivery Area, receiving door

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 4

Distance from :

Area : 372

Collection Size : 1,000 Volumes

Access : Staff

Architectural Features : Windows to circulation desk; 4 work stations as well as plenty of counterspace and storage for flexible working of various staff. Mail boxes, storage space for supplies, projects in progress. Space for manuevering booktrucks. Space for supplies and mailing equipment. Gym Floor/Carpet

Illumination : Windows that open; Full-spectrum, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ 4 PC Computers with printers & lasers

Telecommunications : Power/Data/Tele outlets
2 Phones; Postage meter

Furnishings & Equipment : 4 Work stations; Work table - in center w/ chairs; Sink; Counter; Cabinet storage; Booktrucks; Bulletin Board; Mail boxes; Shelving; Paper Cutter; Clock; Copy Machine; Safe/Money Lock Box; Coat closet / rack.

Shelf Height 6

Vol per LF 8

Stack Units 7

Circulation

Area Designation : Circulation Librarian's Office

Functions Performed : Scheduling, Word Processing, Consulting, Interviewing

Proximity to : Circulation Desk, work areas, receiving door

Seating:

Carrel

Table

Lounge 2

Other

Pac

Staff 1

Distance from :

Area : 120

Collection Size : 60 Volumes

Access : Staff

Architectural Features : Windows to circulation desk; 1 work station; carpet; windows that open;

Illumination : Full-spectrum, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ PC Computer

Telecommunications : Printer

Power/Data/Tele outlets

Furnishings & Equipment : 1 Work station

File Cabinet (3 Drawer)

Bulletin Board

window shades

Telephone

Wall cupboard w/ adjustable

shelving

Shelf Height

Vol per LF

Stack Units ?

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BUILDING PROGRAM

Belmont Memorial Library

Space Needs and Feasibility Study

Circulation

Area Designation : Drive-thru
Functions Performed : Pick up reserves, museum passes, drop off returns

Proximity to : Circulation check-in / delivery area

Distance from :

Area :

Collection Size :

Access :

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Architectural Features :

Illumination :

Acoustics/HVAC :

Security :

Electrical/
Telecommunications :

Furnishings & Equipment : drive up window; Push / pull
drawer.

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library

Adult Services

Space Needs and Feasibility Study

Area Designation : New Books

Functions Performed : High use materials are located here. Low density attractive display of New fiction, nearly new fiction and new non-fiction.

Proximity to : Main Entrance, Circulation Desk, Audio/Visual, Large Print, Fiction & Non fiction stacks should be visible

Seating:

Carrel

Table

Lounge 11

Other

Pac 2

Staff

Distance from : Children's; Young Adult

Area : 1,077

Collection Size : 6,500 Volumes

Access : Public

Architectural Features : Attractive low density display of new library materials. Lighting should be designed to effectively show off materials. Display should be accomplished on low shelving with some sloped shelf face out display. Cozy Areas, Large Windows.

Illumination : Combination direct and indirect lighting

Acoustics/HVAC : Sound-deadening material; Standard system

Security : Visible from the Circulation Desk

Electrical/ 2 PC Computers

Telecommunications :

Furnishings & Equipment : Display Shelving w/ wood ends
11 Lounge Seating; 2 Coffee
Tables; 2 Floor Lamps; 2 pc
tables and chairs

Shelf Height 5

Vol per LF 6

Stack Units 72

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BUILDING PROGRAM

Belmont Memorial Library

Adult Services

Space Needs and Feasibility Study

Area Designation : Audio/Video Collection

Functions Performed : Audio books on tape, CDs, Videos on display for browsing.

Proximity to : Main lobby, Circulation Desk, New Books, Browsing

Seating:

Carrel

Table

Lounge

Other

Pac 1

Staff

Distance from : Quiet areas

Area : 742

Collection Size : 10,200 Volumes

Access : Public

Architectural Features : Integrated into the browsing area/reading area. Comfortable, casual, area for display with flexible furnishings and seating. Ample room for browsing in addition to seating as well as room for expansion.

Books on tape: 2,400; cd's: 3,000; videos: 4,600; computer software: 200.

Illumination : For browsing

Acoustics/HVAC : Sound-deadening material; Standard system

Security : Standard security systems

Electrical/ Power/Tele/Data outlets

Telecommunications : PC

Furnishings & Equipment : Shelving
PC terminal
Cassette display units
CD bins
Video cassette storage/Display
Audio cassette storage/Display

Shelf Height 5

Vol per LF 8

Stack Units 85

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BUILDING PROGRAM

Belmont Memorial Library

Adult Services

Space Needs and Feasibility Study

Area Designation : Adult Fiction Stacks

Functions Performed : Self service bookstack area housing the Fiction collection. Some seating for quiet study/reading.

Proximity to : Popular materials; New books; Large print; Circulation.

Seating:

Carrel

Table

Lounge 4

Other

Pac 2

Staff

Distance from :

Area : 1,240

Collection Size : 23,000 Volumes

Access : Public

Architectural Features : Stacks should be clearly marked • Seating areas integrated with book stacks • low stacks or tables/counters available to review materials • Cozy nooks for reading. Direct route from PACs to stacks without travel through reading or quiet areas. Stacks shall be secured to floor and walls.

Illumination : Quality of light important, daylight desirable but direct sun should be avoided. High illumination levels at all shelving heights.

Acoustics/HVAC : Sound - deadening material; standard systems

Security : Standard systems; stacks placed to allow as much visibility as possible by staff

Electrical/ PAC terminals

Telecommunications : Convenience duplexes
Wood Stack ends

Furnishings & Equipment : 7 ft shelf units, dbl faced, w/3 ft aisles in parallel rows
Lounge Seating
2 sit down PACs
Step stools

Shelf Height 7

Vol per LF 8

Stack Units 137

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BUILDING PROGRAM

Belmont Memorial Library

Adult Services

Space Needs and Feasibility Study

Area Designation : **Adult Non-fiction Stacks**

Functions Performed : Self service bookstack area housing the Non-fiction collection.

Proximity to : Reference

Seating:

Carrel 20

Table

Lounge

Other

Pac 3

Staff

Distance from :

Area : 3,285

Collection Size : 55,000 Volumes

Access : Public

Architectural Features : Stacks should be clearly marked • Seating areas integrated with book stacks, tables/counters available to review materials • Direct route from PACs to stacks without travel through reading or quiet areas

Illumination : Quality of light important, daylight desirable but direct sun should be avoided. High illumination levels at all shelving heights.

Acoustics/HVAC : Sound - deadening material; standard systems

Security : Standard systems; stacks placed to allow as much visibility as possible by staff

Electrical/ PAC terminals

Telecommunications : Convenience Outlets
Tele/Data outlets or conduit throughout
Wood Stack ends
Counters/pullouts

Furnishings & Equipment : 7 Shelf Stack units, dbl faced,
w/3ft aisles in parallel rows
...LF shelving for folios and
oversized books
Step stools and ladder

Shelf Height 7

Vol per LF 8

Stack Units 327

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BUILDING PROGRAM

Belmont Memorial Library

Adult Services

Space Needs and Feasibility Study

Area Designation : Periodicals - Current

Functions Performed : House and display current periodicals and newspapers for browsing and reading.
Capacity for 237 titles

Proximity to : Back Periodicals/Reference Room

Seating:

Carrel

Table 12

Lounge 10

Other

Pac

Staff

Distance from : Children's; Young Adult

Area : 1,052

Collection Size : 237 Volumes

Access : Public

Architectural Features : Integrated into reference room . Attractive, Quite, comfortable, area; Soft seating area for casual reading; Some Table seating for Newspapers Padded carpet; Ambience similar to a living room, Windows that open

Illumination : Good general lighting; Task lighting, natural lighting a plus.

Acoustics/HVAC : Sound-deadening material; Standard system

Security : Standard system; in view of reference staff

Electrical/ Power/Tele/Data outlets

Telecommunications : Task Lighting

Furnishings & Equipment : Tables, 36" x 72"

Study Chairs

Lounge Seating

2 Coffee Tables

Sloped periodical shelving, with
storage for back issues below

Newspaper Display shelving w/
plexiglas

Shelf Height 4

Vol per LF 1

Stack Units 20

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BUILDING PROGRAM

Belmont Memorial Library

Adult Services

Space Needs and Feasibility Study

Area Designation : Large Print

Functions Performed : Stacks and display for large print books collection.

Proximity to : New Books, Audio-Visual Area, Popular Materials,
Circulation, Main lobby

Distance from : Children's, Young Adult

Area : 330

Collection Size : 2,000

Access : Public

Seating:

Carrel

Table 6

Lounge

Other

Pac 1

Staff

Architectural Features : Integrated into main reading area or stacks. Quiet, comfortable, area for casual reading and browsing. 5 Shelf Stacks with the lower shelf at least 12" off the floor

Illumination : Good general lighting.

Acoustics/HVAC : Sound-deadening material; Standard system

Security : Standard system; in view of reference staff

Electrical/ Power/Tele/Data outlets

Telecommunications :

Furnishings & Equipment : 5 Shelf Stacks
No high shelves
Table & chairs
Workstation & chair

Shelf Height 5

Vol per LF 8

Stack Units 17

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BUILDING PROGRAM

Belmont Memorial Library

Reference

Space Needs and Feasibility Study

Area Designation : Reference Room/Adult Study

Functions Performed : Answer reference questions in person, by telephone and email; access online databases, internet CD-ROMs and microfilm materials. House the Reference Collection

Proximity to : Non-fiction; Computer Lab; Young Adult; Quiet Study

Seating:

Carrel

Table 28

Lounge

Other 5

Pac 12

Staff

Distance from : Children's Room

Area : 2,700

Collection Size : 5,000 Volumes

Access : Public

Architectural Features : Lots of large windows, but avoid direct sunlight; Attractive reference desk. Carpet. Sight lines to Young Adult, Computer Lab and Quiet Study.

Illumination : Quality of light important, daylight desirable but direct sun should be avoided. High illumination levels at all shelving heights.

Acoustics/HVAC : Sound - deadening material; standard systems

Security :

Electrical/ 12 PC computers w/ modems

Telecommunications : 6 Printers
2 PC computers @ Reference Desk
laser printers @ reference desk
2 phones
2 copiers

Furnishings & Equipment : Reference Desk w/ 2 workstations; 6 Tables w/ 4 chairs; 1 Index table w/ 4 chairs; 12 PC workstations; 2 microfilm readers; microfilm storage cabinets; 2 dictionary stands; 2 atlas stands; Table lamps, Optilec; Visually Impaired Workstation. 2 copiers, Kurzweil workstation.

Shelf Height 4

Vol per LF 6

Stack Units 69

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BUILDING PROGRAM

Belmont Memorial Library

Reference

Space Needs and Feasibility Study

Area Designation : Young Adult Room

Functions Performed : Young adult browsing, reading and seating. Reference, CD-ROM Games, Word processing

Proximity to : Non-fiction Collection, Reference service point

Seating:

Carrel

Table 24

Lounge 3

Other

Pac 6

Staff 1

Distance from : Quiet areas, Children's Area

Area : 1,516

Collection Size : 6,100 Volumes

Access : Public

Architectural Features : Comfortable, casual, area for display with flexible furnishings and seating. Combination of book racks and stacks. Ample room for browsing in addition to seating at table and window seats. Picture rails and some tackable wall surfaces. Must have sight lines from Reference Room service point. No nooks or crannies for hiding. Window wall separation from Reference starting at 36" above finished floor.

Illumination : For browsing and sitting

Acoustics/HVAC : Sound-deadening material - Window wall separation from Reference starting at 36" above finished floor.; Standard HVAC systems

Security : Standard systems

Electrical/ 6 PC Computers; 3 Printers; 1 staff computer / printer

Telecommunications : Listening stations
Complete tel/data

Furnishings & Equipment : 4 Tables w/ 6 Chairs each; 3 Upholstered lounge chairs; 6 PC workstations w/ chairs; Reference desk w/ chair; picture rail; Shelving
Magazine display rack
Paperback Shelving
Coffee / Game table for chess and backgammon

Shelf Height 7

Vol per LF 10

Stack Units 29

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BUILDING PROGRAM

Belmont Memorial Library

Reference

Space Needs and Feasibility Study

Area Designation : Local History / Claflin Room

Functions Performed : Provides a quiet area for the study of materials on local history and genealogy.

Proximity to : Reference Room; Photocopier.

Seating:

Carrel

Table 6

Lounge

Other

Pac

Staff 2

Distance from : Circulation; Children's Room.

Area : 750

Collection Size : 1,200 Volumes

Access : Public

Architectural Features : This should be a bright, warm room with "fine finishes" featuring lots of wood, window seats, and upholstered furniture. It should be configured as a separate, intimate reading space. Must be locked for security if unattended.

Illumination : Well lit; ambient as well as task table lamps.

? TASK

sf

Acoustics/HVAC : Climate control Humidity and HVAC.

Security : Locked when unattended

Electrical/ 1 PC; Printer; Scanner; Magnification Device; Phone;

Telecommunications : Copier

Furnishings & Equipment : 1 large table w/ 6 chairs; 2 locked display cases; Book shelves; file cabinet; Workstation w/ chair; 1 desk w/ chair; Table lamps, Copier

Shelf Height 5

Vol per LF 8

Stack Units 10

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BUILDING PROGRAM

Belmont Memorial Library

Reference

Space Needs and Feasibility Study

Area Designation : Computer Lab

Functions Performed : Computer Classes, Public Word Processing, Internet searching, catalog.

Proximity to : Reference

Seating:

Carrel

Distance from : Children's Room

Table

Lounge

Area : 650

Other

Collection Size :

Pac 12

Access : Public

Staff 1

Architectural Features : Glass wall separating from Reference Area.

Illumination : non-glare indirect illumination

Acoustics/HVAC : Standard systems

Security : Glass wall separating from Reference Area.

Electrical/ 13 PCs, printer, scanner, Minimum 13 ethernet ports,

Telecommunications : tele/data outlets, duplex outlets

Furnishings & Equipment : Projection Screen, White board,
12 public computer stations, 1
staff Station

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library

Reference

Space Needs and Feasibility Study

Area Designation : Study Rooms (2)@75sf,(1)@100sf
Functions Performed : Space for patrons to work without distraction

Proximity to : Reference; Non-fiction stacks

Seating:

Carrel

Table 8

Lounge

Other

Pac

Staff

Distance from : Children's; traffic patterns

Area : 250

Collection Size :

Access : Public

Architectural Features : Quiet, glass partitions. One room @ 100sf for four people; two rooms @ 75sf for two people. Comfortable seating and work stations for extended periods. Spaces should be flexible and equipped for diverse computer , tutoring, and study uses as well as media listening and viewing capabilities. 9

Illumination : Even, well lit with task lighting

Acoustics/HVAC : Sound deadening material; Standard systems; some control over systems to prevent discomfort.

Security : Standard system; in view of Circulation or Reference staff

Electrical/ Power, data and communications outlets

Telecommunications : Task Lighting

Furnishings & Equipment : Study tables
Chairs for above

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library
Space Needs and Feasibility Study

Reference

Area Designation : Reference Work Room
Functions Performed : Work space for the Reference Staff.

Proximity to : Reference Stacks, Reference Room, Photocopier,
Coordinator of Public Services

Distance from :

Area : 520

Collection Size : Volumes

Access : Staff

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 8

Architectural Features : Work Space for the Reference Staff. Computer stations should accommodate use by individual staff. Windows to exterior.

Illumination : Even, possibly indirect, dim-able, non-glare

Acoustics/HVAC : Sound-deadening materials; standard systems

Security : Standard system; visual control over non-circulating reference materials

Electrical/ Photocopier

Telecommunications : Power/Data/Tele outlets
phones

Furnishings & Equipment : 8 Workstations w/ 7 PC's; Filing
cabinets and shelf storage;
Bulletin Board

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Reference

Space Needs and Feasibility Study

Area Designation : Coordinator of Public Services

Functions Performed : Scheduling; Word Processing; Consulting; Interviewing and small group meetings

Proximity to : Reference work area, administrative areas

Seating:

Carrel

Table 4

Lounge

Other

Pac

Staff 1

Distance from : Children's

Area : 180

Collection Size :

Access : Staff

Architectural Features : Accessible but private location. Windows to exterior; Picture rails; tackable wall surface or whiteboard. Blinds on internal and external glazing.

Illumination : Standard systems, task lighting

Acoustics/HVAC : Standard systems

Security : standard systems

Electrical/ Power/Tele/Data outlets

Telecommunications : Computer

Furnishings & Equipment : Desk
Chair
Shelving
lateral files; lockable
table w/ 4 guest chairs
clock; PC Computer and printer;
bulletin board

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Children's Service Desk

Functions Performed : Workspace for the Children's Librarian. Must have good visual supervision of the entire Children's Department

Proximity to :

Children's AV Activity Area, Reference , and Periodicals

Distance from : Quiet Areas of the Library

Area : 434

Collection Size : Volumes

Access : Public

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 3

Architectural Features : The children's Desk should be friendly and approachable for circulation and ready reference, child height. Located to welcome patrons to the Children's Department. Must have good supervision of the entire Children's Department with space for 3 staff. One workstation with 3 PC' with receipt printers and lasers, and storage supply.

Illumination : Non-glare general lighting/open natural light; some task lighting.

Acoustics/HVAC :

Security :

Electrical/ 3 PC computers w/ receipt printers and lasers

Telecommunications : Telephone
Duplex electrical receptacles

Furnishings & Equipment : Desk w/ drawer storage;
workstaion; 3 chairs; 4 kickstools;
3 PAC/PC on desk; Printers; 6
Booktrucks; lockable cabinet;
shelving for ready reference

Shelf Height
Vol per LF
Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Children's Staff Workroom

Functions Performed : Workspace for Children's Staff. Tasks include: book selection, program planning, preparation of bibliographies, collection evaluation, professional reading, network related activities, book repair, writing publicity.

Proximity to : Children's Service Desk, Children's Department;
Programming Room, Technical services

Seating:

Carrel

Table 4

Lounge

Other 2

Pac

Staff 3

Distance from : Reference Services, Adult collections

Area : 600

Collection Size : 2,500 Volumes

Access : Staff

Architectural Features : Window to the exterior, door with lock and window to Children's Service Desk, Return Slot to Return Area, Counter with sink for book repair.

Illumination : Non-glare general lighting/open natural light; some task lighting.

Acoustics/HVAC : Sound-deadening materials;

Security : Standard systems; Ability to lock room

Electrical/ Telephone

Telecommunications : (3) PCs & Printers
Plenty of power/Tele/Data outlets

Furnishings & Equipment : (1) 4' x 6' worktable w/ 4 chairs; 3
Desks w/Task Chairs; 4
Booktrucks; (2) 5 drawer File
Cabinets; Clock; Wastebasket;
12" deep shelving; Sink; Copier

Shelf Height

Vol per LF

Stack Units ?

DRAFT

BUILDING PROGRAM

Belmont Memorial Library
Space Needs and Feasibility Study

Children's Services

Area Designation : Children's Storage
Functions Performed : Secure Storage for equipment and supplies

Proximity to : Children's Staff Workroom

Distance from : Public areas

Area : 100

Collection Size :

Access : Staff

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Architectural Features : Large (100sf) supply closet w/ extra deep shelving off Children's Staff Workroom.

Illumination :

Acoustics/HVAC :

Security : Standard systems; Ability to lock

Electrical/

Telecommunications :

Furnishings & Equipment : extra deep storage shelving

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Children's Services Office

Functions Performed : Workspace for Children's Librarian. Tasks include: book selection, program planning, preparation of bibliographies, collection evaluation, professional reading, network related activities, private conversations with staff, writing publicity.

Proximity to : Children's Service Desk, Children's Department; Technical services

Seating:

Carrel

Distance from : Reference Services, Adult collections

Table

Lounge

Area : 180

Other 4

Collection Size :

Pac

Staff 1

Access : Staff

Architectural Features : Window to the exterior, door with lock and window to Children's Service Desk;

Illumination : Non-glare general lighting/open natural light; some task lighting.

Acoustics/HVAC : Sound-deadening materials;

Security : Standard systems; Ability to lock room

Electrical/ Telephone

Telecommunications : PC & Printer

Plenty of power/Tele/Data outlets

Furnishings & Equipment : Worktable w/4 chairs; Desk
w/Task Chair; Booktruck; 5 drawer
File Cabinet Clock; Wastebasket;
30 feet 12" deep shelving

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Children's Picture Book Area

Functions Performed : Book browsing/book and quiet reading for preschool children and adults.

Proximity to :

Distance from : Quite study areas and Reference

Area : 1,000

Collection Size : 8,635 Volumes

Access : Public

Seating:

Carrel

Table 8

Lounge

Other 6

Pac 2

Staff

Architectural Features : This area should be separate from older children's area but integrated into the children's library. A comfortable, attractive and open area for reading, relaxing and interacting with peers and parents. Stacks should be scaled to the children and integrated into seating areas. Area for parents to read to children
.....Board Books,.....Puzzles, 7,566 Beginning Books, 1,069 Easy Books.

Illumination : Non-glare general lighting/open natural light; some task lighting.

Acoustics/HVAC : Sound deadening material; Standard systems; Textiles, acoustical panels, complex and interesting shapes and forms to break up sound.

Security : Standard systems; Equipment must be secure; must be in view of children's service desk

Electrical/

Telecommunications : 2 CD ROM Listening Stations

Furnishings & Equipment : 3 Picture Book / Coffee Tables

Pre-School Chairs

8 Chairs, child height

2 Tables, child height

2 Step stools, Small;

Windowseats; Toy Box; doll house

Shelf Height 3

Vol per LF 15

Stack Units 64

Children's Services

Space Needs and Feasibility Study

Area Designation: Children's Study Area

Functions Performed: Area for browsing and reading, reference, using audio / visual equipment, children's periodicals

Proximity to: Children's Service Desk

Seating:

Carrel

Table 30

Lounge 8

Other

Pac 10

Staff

Distance from:

Area: 2,200

Collection Size: Volumes

Access: Public

Architectural Features: A comfortable, attractive and open area for browsing, study, reading and listening and working on computers with 8 lounge chairs and 5 adult size tables.

Illumination: Non-glare general lighting/open natural light; some task lighting.

Acoustics/HVAC: Sound deadening material; Standard systems; Textiles, accoustical panels, complex and interesting shapes and forms to break up sound.

Security: Standard systems; Equipment must be secure; must be in view of children's service desk

Electrical/ tel / data

Telecommunications: 10 PC's
copier

Furnishings & Equipment: 5 tables w/ 6 chairs each, 1 dictionary stand, 1 umbrella stand, circulating software bins, 10 PC and chairs, copier, Sloped Periodical Shelving, 8 Lounge Chairs

Shelf Height 3

Vol per LF 1

Stack Units 0

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BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Children's Periodicals
Functions Performed : House and display current periodicals and newspapers for browsing and reading.
Capacity for 30 titles

Proximity to : Children's Study/Picture Book

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Distance from :

Area : 30

Collection Size : 30 Volumes

Access : Public

Architectural Features : Integrated into Children's Study and Picture Book Areas. Attractive, Quite, comfortable, area; Soft seating area for casual reading.

Illumination : Good general lighting; Task lighting, natural lighting a plus.

Acoustics/HVAC : Sound-deadening material; Standard system

Security : Standard system; in view of reference staff

Electrical/ Power/Tele/Data outlets

Telecommunications : Task Lighting

Furnishings & Equipment :

Shelf Height 4

Vol per LF 1

Stack Units 3

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BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Children's Listening Area

Functions Performed : Area for using audio / visual equipment.

Proximity to : Children's Service Desk

Seating:

Carrel

Table

Lounge

Other

Pac 4

Staff

Distance from :

Area : 160

Collection Size : Volumes

Access : Public

Architectural Features : A comfortable and attractive area for listening and working on computers with 4 CD ROM listening/PC stations. Separate with glass wall.

Illumination : Non-glare general lighting.

Acoustics/HVAC : Sound deadening material; Standard systems; Textiles, accoustical panels, Separate with glass wall.

Security : Standard systems; Equipment must be secure; must be in view of children's service desk

Electrical/ tel / data

Telecommunications : 4 CD Rom Listening Stations

Furnishings & Equipment : 4 CD Rom Listening Stations with chairs

Shelf Height 3

Voi per LF 1

Stack Units 0

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BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Juvenile Audio Visual

Functions Performed : Area for display of Audio Visual Materials and an area for use of audio visual and computer equipment.

Proximity to : Children's A/V Activity Area

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Distance from :

Area : 428

Collection Size : 5,000 Volumes

Access : Public

Architectural Features : Shelving for the Audio Visual Collection
1000 CD's, 2000 Videos, 500 Computer Software; 500 Audio; 1000 Juvenile kits/Books on Tape.

Illumination : Non-glare general lighting/open natural light

Acoustics/HVAC : Sound deadening material; Standard systems; Textiles, accoustical panels, complex and interesting shapes and forms to break up sound.

Security : Standard systems; Equipment must be secure; must be in view of children's service desk

Electrical/ Duplex electrical receptacles

Telecommunications : A/V
computer
CTV

Furnishings & Equipment : CD Bins / Shelving
Cassette & Book Housing
Video Shelving, 3 cassette racks

Shelf Height 10

Vol per LF 10

Stack Units 17

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BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Juvenile Reference Area

Functions Performed : Children's Reference Collection and Study Area

Proximity to : Juvenile Non fiction, Children's Study

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Distance from : Picture Books / Play Areas

Area : 65

Collection Size : 650 Volumes

Access : Public

Architectural Features : See Study / Listening for seating

Illumination : Non-glare general lighting/open natural light; some task lighting.

Acoustics/HVAC : Sound deadening material; Standard systems; Textiles, accoustical panels, complex and interesting shapes and forms to break up sound.

Security : Standard systems; Equipment must be secure; must be in view of children's service desk

Electrical/

Telecommunications :

Furnishings & Equipment : Stack Units

Shelf Height 3

Vol per LF 7

Stack Units 10

BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Story Hour & Craft

Functions Performed : Storytime programs, craft programs

Proximity to : Children's Library, Children's Desk and children's restroom, Large meeting Room

Seating:

Carrel

Distance from : Reference Services, Adult collections, Quiet study area

Table 24

Lounge

Other 40

Area : 1,008

Pac

Collection Size :

Staff

Access : Public

Architectural Features : A fun area with space for movement. Separate room from the rest of the Children's Library with strong visual connections. Area for story hour should be carpeted and have room darkening capability for films. There should be an area or separate room for projects with an easily washable floor surface as well as 2 sinks, counter & shelves. Walk in storage with shelving. Pin up/Tack board area. Puppet booth. Sepate area for 80 Sq.ft. Storage Room

Illumination : Windows • Soft adjustable general room light • Adjustable track lighting

Acoustics/HVAC : Sound deadening material • standard systems, adjustable for faster air-exchange rate

Security : Standard systems; within view of service desk

Electrical/ Duplex electrical receptacles

Telecommunications : Data utility jacks

Cable TV jack

TV monitor

1 Projection Screen

Furnishings & Equipment : 24 Child height Chairs, Small, Stacking; 40 Cushions/Mats (for story time); 4 Child height Folding Tables; 1 Projection Screen
Pin up/Tack board area; 40 stacking Adult-size chairs; adjustable easel; Puppet theater; clock; wastebasket; Shelving unit for puppets and books.

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library

Children's Services

Space Needs and Feasibility Study

Area Designation : Children's Toilet

Functions Performed : Sink, self-flushing toilet and accessories sized for kindergarten age

Proximity to : Drinking fountain

Seating:

Carrel

Distance from :

Table

Lounge

Area : 150

Other

Collection Size :

Pac

Staff

Access : Public

Architectural Features : (1) Handicapped accessible toilet and (1) toilet scaled for kindergarden aged children. (2) Unisex toilets total. Materials should be durable and easily cleaned.

Illumination : standard

Acoustics/HVAC : Soundproof

Security :

Electrical/

Telecommunications :

Furnishings & Equipment : Baby changer
Child-sized fixtures

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library

Administrative Services

Space Needs and Feasibility Study

Area Designation : Director's Office

Functions Performed : Library Administration, small meetings,

Proximity to : Administration Office, Assistant Director's Office, Trustee's / Conference

Seating:

Carrel

Table

Lounge

Other 4

Pac

Staff 1

Distance from : Noisy Areas

Area : 242

Collection Size : 75

Access : Staff

Architectural Features : Accessible but private location. Picture rails; tackable wall surface or whiteboard. Blinds on internal and external glazing. **Separate Rest room.**

Illumination : Standard systems, task lighting

Acoustics/HVAC : Standard systems

Security : standard systems

Electrical/ Power/Tele/Data outlets

Telecommunications : Computer
Fax; Scanner

Furnishings & Equipment : Desk
Chair
Credenza
Shelving
2 lateral files; lockable
Meeting table
4 guest chairs
Closet

Shelf Height

Vol per LF

Stack Units ?

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Administrative Services

Space Needs and Feasibility Study

Area Designation : Assistant Director's Office

Functions Performed : Library Administration, small meetings,

Proximity to : Administrative work room, Secretary, Trustees /
Conference / Small Meeting room, Director's Office

Distance from : Noisy Areas

Area : 180

Collection Size : 50 Volumes

Access : Staff

Seating:

Carrel

Table

Lounge

Other 4

Pac

Staff 1

Architectural Features : Accessible but private location. Picture rails; tackable wall surface or whiteboard.
Blinds on internal and external glazing, windows that open

Illumination : Standard systems, task lighting

Acoustics/HVAC : Standard systems

Security : standard systems

Electrical/ Power/Tele/Data outlets

Telecommunications : Computer
Fax; Scanner

Furnishings & Equipment : Desk
Chair
Credenza
Shelving
2 lateral files; lockable
Meeting table
4 guest chairs
Coat rack

Shelf Height

Vol per LF

Stack Units ?

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Administrative Services

Space Needs and Feasibility Study

Area Designation : Administration Office

Functions Performed : Administration, record keeping, communications, appointments, payroll, etc.

Proximity to : Director's Office, Assistant Director's Office.

Seating:

Carrel

Table

Lounge

Other 2

Pac

Staff 1

Distance from : Main reading room

Area : 275

Collection Size : 25

Access : Staff

Architectural Features : Accessible but private location. Windows that open. Blinds on internal and external glazing. Copier - work counter separated with half wall.

Illumination : Standard systems, task lighting

Acoustics/HVAC : Standard systems

Security : standard systems

Electrical/ Power/Tele/Data outlets

Telecommunications : Computer, Printer, copier, calculator, typewriter, paper cutter, Fax; Scanner

Furnishings & Equipment : Desk; Chair; Credenza; Shelving;
2 lateral files, one three drawer
file; lockable, work table/counter,
bulletin board, storage
cabinet/closet; 2 guest chairs
Copier

Shelf Height

Vol per LF

Stack Units ?

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BUILDING PROGRAM

Belmont Memorial Library

Technical Services

Space Needs and Feasibility Study

Area Designation : Delivery

Functions Performed : Receiving of all library materials ie: books, videos, periodicals. Receipt of processing supplies. Receipt, sorting and distribution of mail. Staff communication.

Proximity to : Coordinator's Office

Seating:

Carrel

Distance from : Processing Area

Table

Lounge

Area : 180

Other

Collection Size :

Pac

Staff 2

Access : Staff

Architectural Features : Large 3' x 3' counter height worktable and plenty of counterspace and storage for flexible working of various staff. Mail boxes, shared storage space for supplies, projects in progress. Easy access to receiving area for opening boxes. Easy path receiving to workspace. Space for maneuvering booktrucks. Space for supplies and mailing equipment.

Illumination : Full-spectrum, no-glare, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ PC Computer with modem; Printer; Power/Data/Tele

Telecommunications : outlets; FAX; Typewriter; Photocopier;

Furnishings & Equipment : 3' x 3' Work table; 4' x 3' table for copier; 36" deep Counters; Cabinet storage; File Cabinets (3 Drawer); Booktrucks; Bulletin Board; Mail boxes; 2 large wastebaskets; Coat closet / rack

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library

Technical Services

Space Needs and Feasibility Study

Area Designation : Serials/Magazines

Functions Performed : Serials / Magazine Control; Periodical Data Entry; Order processing supplies

Proximity to : Coordinator's Office

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 1

Distance from : Processing Area

Area : 120

Collection Size : 300 Volumes

Access : Staff

Architectural Features :

Illumination : Full-spectrum, no-glare, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ PC Computer with modem; Printer; Power/Data/Tele

Telecommunications : outlets; Laser

Furnishings & Equipment : (1) 10' x 3' Countertop; (1) 6' x 3'
Countertop; (1) File Cabinet; (1)
Task Chair; Adding Machine;
Booktruck

Shelf Height

Vol per LF

Stack Units ?

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Technical Services

Space Needs and Feasibility Study

Area Designation : **Acquisitions/Cataloging**

Functions Performed : Acquisitions (Ordering, Invoicing, Inventorying of Library materials - books etc.)
Cataloging of Library Materials: Adult; Young Adult; Juvenile (books, audio-visuals, cd-rom/software, etc.)

Proximity to : Delivery Area

Seating:

Carrel

Distance from : Data Entry

Table

Lounge

Other

Area : 120

Pac

Collection Size : 300 Volumes

Staff 1

Access : Staff

Architectural Features :

illumination : Full-spectrum, no-glare, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ Telecommunications : PC Computer with modem; Printer; Power/Data/Tele outlets; Laser

Furnishings & Equipment : (1) 10' x 3' Countertop; (1) 6' x 3' Countertop; (1) File Cabinet; (1) Task Chair; 2 Booktrucks; Adding Machine

Shelf Height
Vol per LF
Stack Units ?

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BUILDING PROGRAM

Belmont Memorial Library

Technical Services

Space Needs and Feasibility Study

Area Designation : Book Processing

Functions Performed : Processing and repair of all books, Audio Visuals, CD-ROM/Software and Periodicals. Repair of books and AV materials, etc. Bindery preparation.

Proximity to : Technical Services; Cataloging / Acquisitions

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 4

Distance from : Receiving Area (Workflow)

Area : 200

Collection Size :

Access : Staff

Architectural Features : Large 8' x 3 1/2' worktable and plenty of counterspace and storage for flexible working of various staff.

Illumination : Full-spectrum, no-glare, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ Telecommunications : PC Computer with modem; Printer; Power/Data/Tele outlets; FAX; Postage meter; Typewriter; Paper cutter

Furnishings & Equipment : 8' x 3 1/2' Work table; 1 8' x 3' desk; Sink; 36" deep sit down and stand up Counters; Cabinet storage; File Cabinets (3 Drawer); Booktrucks; Shelves (7 sheif); 2 large wastebaskets

Shelf Height
Vol per LF
Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Technical Services

Space Needs and Feasibility Study

Area Designation : Data-Entry A/YA

Functions Performed : Data Entry for Adult/ Young Adult

Proximity to : Processing Area

Seating:

Carrel

Distance from : Delivery Area

Table

Lounge

Area : 120

Other

Collection Size : 600 Volumes

Pac

Staff 1

Access : Staff

Architectural Features : Large 10' x 12' countertop / workstation with plenty of counterspace and storage for flexible working of various staff. Include storage space for supplies, projects in progress. Space for maneuvering booktrucks.

Illumination : Full-spectrum, no-glare, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ Telecommunications : PC Computer with modem; Printer; Power/Data/Tele outlets; 1 book cart

Furnishings & Equipment : (1)10' x 3' Countertop; (1) 7' x 3" Countertop; (1) Chair

Shelf Height

Vol per LF

Stack Units ?

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Technical Services

Space Needs and Feasibility Study

Area Designation : Data-Entry Juvenile

Functions Performed : Data Entry for Juvenile materials

Proximity to : Processing Area

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 1

Distance from : Delivery Area

Area : 120

Collection Size : 600 Volumes

Access : Staff

Architectural Features : Large 10' x 12' countertop / workstation with plenty of counterspace and storage for flexible working of various staff. Include storage space for supplies, projects in progress. Space for maneuvering booktrucks.

Illumination : Full-spectrum, no-glare, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ PC Computer; Printer; Power/Data/Tele outlets; 1

Telecommunications : book cart

Furnishings & Equipment : (1)10' x 3' Countertop; (1) 7' x 3"
Countertop; (1) Chair

Shelf Height

Vol per LF

Stack Units ?

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Technical Services

Space Needs and Feasibility Study

Area Designation : Coordinator

Functions Performed : Supervises Technical Services Department including Acquisitions, Cataloging, Processing, Invoicing, Purchase Orders, etc. Orders Computer hardware. Selects categories of Adult Non-fiction and adult audio-visuals. Conducts private conversations and interviews staff.

Proximity to : Delivery Area

Seating:

Carrel

Table

Lounge

Other 4

Pac

Staff 1

Distance from : Processing area

Area : 180

Collection Size : Volumes

Access : Staff

Architectural Features : Window into Tech Services,

Illumination : Full-spectrum, no-glare, energy-efficient lighting

Acoustics/HVAC : Sound-deadening materials; Some ability to control temperature

Security : Standard system; all equipment secured

Electrical/ PC Computer with modem; Printer; Power/Data/Tele

Telecommunications : outlets; Laser

Furnishings & Equipment : (1) 7' x 3' Desk; (1) 6' x 3'
Countertop; (1) 48" dia. Circular
table; (1) Task Chair; 4 guest
chairs; 1 Booktrucks; (1) File
Cabinet

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Space Needs and Feasibility Study

Technical Services

Area Designation : Tech Services Storage

Functions Performed : Secure Storage for equipment and supplies

Proximity to :

Distance from : Public areas

Area : 100

Collection Size :

Access : Staff

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Architectural Features : Central location in Technical Services

Illumination :

Acoustics/HVAC :

Security : Standard systems; Ability to lock

Electrical/

Telecommunications :

Furnishings & Equipment : storage shelving

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Public Meeting

Space Needs and Feasibility Study

Area Designation : Trustees / Conference Room

Functions Performed : Room for use by the Trustees. Staff meetings, as well as by community organizations.

Proximity to : Administration, Director's Office, storage, foyer and toilets for after-hours use.

Seating:

Carrel

Table 8

Lounge

Other 12

Pac

Staff

Distance from : Noisy Areas

Area : 329

Collection Size : 100 Volumes

Access : Public

Architectural Features : Meeting space for 20. Doubles as a public meeting space, should have direct access to small storage area for coats and/or supplies. Windows that open, lockable storage, serving counter

Illumination : Standard systems

Acoustics/HVAC : Standard systems

Security : Standard systems

Electrical/ Plenty of power/tele/data

Telecommunications : separate security system

Furnishings & Equipment : 1 Conference Table; 20 Chairs
Pantry/Kitchenette in Room

Shelf Height

Vol per LF

Stack Units ?

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Public Meeting

Space Needs and Feasibility Study

Area Designation : Large Meeting Room

Functions Performed : Hold large meetings, presentations, public meetings, workshops. After hours access secure from rest of building. Provide access to kitchen and projection room, AV equipment storage room, public toilets, payphone.

Proximity to : Public Toilets, Entrance, Kitchenette, Children's Library, secure storage for furniture and equipment

Seating:

Carrel

Table

Lounge

Other 100

Pac

Staff

Distance from : Quiet Study Areas, Reference

Area : 1,440

Collection Size :

Access : Public

Architectural Features : A comfortable open room. Picture rails and fine finishes. Secure storage for AV Equipment. Controlled natural lighting would be a plus. Excellent acoustics for sound programs, lectures etc. Natural light. Provide a passthrough to the kitchen if possible.

Illumination : Lighting system for lighting artwork on the walls - switch with rheostat controls; Control general lighting in section. Some stage lighting.

Acoustics/HVAC : As sound proof as possible; must have separate control of temperature and air-changing

Security : All standard security; room should be completely separate from library proper, giving complete security to the Library proper

Electrical/ Speakers for microphone and movie projector

Telecommunications : Dim-able lighting, Track or directional Artwork lighting
Plenty of electrical outlets, floor outlets
Ability to project computer screen image
Auditory enhancement system
CTV hook-up, Cable TV broadcasting capability
Separate security system

Furnishings & Equipment : 100 padded folding Chairs
Projection screen Permanent
Portable black/marker board
Coat racks
Lectern
Long tables for U shaped set-up

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Public Meeting

Space Needs and Feasibility Study

Area Designation : Kitchenette

Functions Performed : Food preparation, reheating and clean-up for functions in the Meeting Room .

Proximity to : Public Toilets, Entrance, Meeting Room

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Distance from :

Area : 120

Collection Size :

Access : Staff

Architectural Features : Provide lockable storage closets for local groups and clubs. Easy to clean materials. Direct access to the meetingroom and a pass through or staging area for ease of distribution.

Illumination : Standard systems; under cabinet and task systems

Acoustics/HVAC : As sound proof as possible;

Security : Lockable

Electrical/ Plenty of outlets

Telecommunications :

Furnishings & Equipment : Sink
Refrigerator
Cooktop
Microwave
Dishwasher (optional)
Cabinets
Countertop
Drawers

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Public Meeting

Space Needs and Feasibility Study

Area Designation : Conference Room

Functions Performed : Meetings, as well as by community organizations. This space can double as a small class room.

Proximity to :

Seating:

Carrel

Distance from :

Table

Lounge

Area : 520

Other 25

Collection Size :

Pac

Access : Public

Staff

Architectural Features : Meeting space for 25. Doubles as a public meeting and study space, should have direct access to small storage area for coats and/or supplies. Windows that open, lockable storage, serving counter

Illumination : Standard systems

Acoustics/HVAC : Standard systems

Security : Standard systems

Electrical/ Plenty of power/tele/data

Telecommunications : separate security system

Furnishings & Equipment : 2-4 Table; 25 Chairs

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Bldg Support

Space Needs and Feasibility Study

Area Designation : Staff Room

Functions Performed : Private staff lounge area for meals and breaks, for 8 staff total

Proximity to : Staff Toilet. Staff Lockers.

Seating:

Carrel

Table 8

Lounge 2

Other 2

Pac

Staff

Distance from : Public Areas

Area : 450

Collection Size :

Access : Staff

Architectural Features : Room should be an escape, for relaxing and meals. Comfortable, easy to clean materials especially near wet/food preparation area. Dining table and chairs for 4 employees. Upholstered lounge chairs and/or couch for relaxing. Provide lockers for staff's personal belongings in or adjacent to the lounge. Easily maintained floor and wall surfaces. Wall cabinet for mugs, dishes, coffee, tea, etc.

Illumination : Standard systems, under cabinet lighting

Acoustics/HVAC : Standard systems

Security : Standard systems, lockers for staff belongings

Electrical/ Telephone; Television; Refrigerator, Microwave, Stove

Telecommunications : with hood, Copier

Furnishings & Equipment : Space for 25 Lockers / Cubbies, half height; Dining table; 8 Chairs; Refrigerator; microwave; Countertop w/sink; 2 Lounge chairs; sofa; Coatrack or pegs; Wall cabinets; clock; Bulletin board; Stove with hood, Coffee Maker

Shelf Height

Vol per LF

Stack Units

DRAFT

BUILDING PROGRAM

Belmont Memorial Library

Bldg Support

Space Needs and Feasibility Study

Area Designation : Custodian's Office Area

Functions Performed : Private area for custodian work; Scheduling; Meeting Room Scheduling; Placing Supply Orders; Meeting with vendors.

Proximity to : Delivery/loading dock area; staff entrance and outdoors;
HVAC equipment; electrical service; Plumbing service;
Telephone service

Distance from : Public Areas; Quite Study Areas

Area : 132

Collection Size : 30 Volumes

Access : Staff

Seating:

Carrel

Table

Lounge

Other

Pac

Staff 1

Architectural Features : Windows; Coat Closet; Shelving, Durable materials.

Illumination : Bright lighting

Acoustics/HVAC : Sound-deadening walls; Main controls for HVAC should be apparent

Security : Standard systems; must be locked when not in use; Tools etc... must have locked housing

Electrical/ Telephone

Telecommunications : Power for tools, etc...

Furnishings & Equipment : Desk
Chair, desk
Supply cabinet
Shower, Sink & toilet

Shelf Height

Vol per LF

Stack Units ?

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BUILDING PROGRAM

Belmont Memorial

Bldg Support

Space Needs and Feasibilit

Area Designation : Custodial Maintain. / Delivery

Functions Performed : Shipping and receiving packages; storage area for custodial cleaning supplies; storage for vacuums, lawn mower, snow blower, shovels, tools, gasoline, assembling equipment and furniture, minor repairs

Proximity to : Custodial office, receiving, elevator, service entrance

Seating:

Carrel

Distance from : Public areas, quiet study, staff room and offices

Table

Lounge

Area : 284

Other

Collection Size :

Pac

Staff

Access : Staff

Architectural Features : Windows; Durable materials; industrial typ flooring, industrial shelving

Illumination : General inexpensive lighting

Acoustics/HVAC : Soundproofing, Exhaust plans; Standard systems

Security : Standard systems

Electrical/ telephone, power for tools
Telecommunications :

Furnishings & Equipment : Storage for: Lawnmower; Snowblower; Vacuum cleaners, leaf blower, shovels, ice melt. Mop Sink, Wastebasket, fire extinguisher, workbench, tool cabinets, supply cabinets, Hazardous materials cabinet, counters, refrigerator, Lockers

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memor

Bldg Support

Space Needs and Feas

Area Designation : Boiler/Mechanical

Functions Performed : Checking boiler / AC/ Heating, etc. Maintain electrical Breakers and control the entire building, phone system, sprinkler system, central vacuum

Proximity to : Delivery/loading dock area; Custodian's Office

Seating:

Carrel

Distance from : Public Areas; Quiet Study Areas

Table

Lounge

Other

Area :

Pac

Collection Size :

Staff

Access : Staff

Architectural Features : Windows; Coat Closet; Shelving, Durable materials.

Illumination : Bright lighting

Acoustics/HVAC : Sound-deadening walls; Main controls for HVAC should be apparent

Security : Standard systems; must be locked when not in use; Tools etc... must have locked housing

Electrical/ Telephone

Telecommunications : Power for tools, etc...

Fi

Furnishings & Equipment : Sink; Wastebasket; Fire Extinguisher; Exhaust Fans

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Bldg Support

Area Designation:
Functions Performed:

BUILDING PROGRAM

Bldg Support

Area Designation : LAN Closet
Functions Performed : will contain networking equipment for MLN and town tower and Windows NT Server.

Proximity to :

Proximity to : Technology Office

Distance from :

Distance from : Public Areas

Area :

Area : 72

Collection Size :

Collection Size :

Access :

Access :

Architectural Features :

Architectural Features :

Illumination :

Illumination :

Acoustics/HVAC :

Acoustics/HVAC : Good ventilation, AC for equipment

Security :

Security : high security

Electrical/Telecommunications :

Electrical/Telecommunications : 7 foot racks with 2 MLN hubs; 1 MLN router, 1 CD-ROM tower hub, 1 terminal server, plus town wide network.

Furnishings & Equipment :

Furnishings & Equipment : 7 foot racks

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BUILDING PROGRAM

Belmont Memorial Library

Bldg Support

Space Needs and Feasibility Study

Area Designation : Utility Broom Closets

Functions Performed : Secure Storage for equipment and supplies

Proximity to : Public areas, Public Rest rooms.

Seating:

Carrel

Table

Lounge

Other

Pac

Staff

Distance from : Quiet areas.

Area : 150

Collection Size :

Access : Staff

Architectural Features : Approximately 50 square feet per floor. Shelving for supplies, Mop Sink

Illumination :

Acoustics/HVAC :

Security : Standard systems; Ability to lock

Electrical/

Telecommunications :

Furnishings & Equipment : Mop Sink, storage shelving.

Shelf Height

Vol per LF

Stack Units

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BUILDING PROGRAM

Belmont Memorial Library

Bldg Support

Space Needs and Feasibility Study

Area Designation : Library Materials Storage

Functions Performed : General storage for library materials and equipment.

Proximity to : Custodial/receiving

Seating:

Carrel

Distance from :

Table

Lounge

Area : 500

Other

Collection Size :

Pac

Staff

Access : Staff

Architectural Features : Durable materials. receiving and staff entrance and other building support rooms

Illumination : General inexpensive lighting

Acoustics/HVAC : Standard systems

Security : Standard systems

Electrical/

Telecommunications :

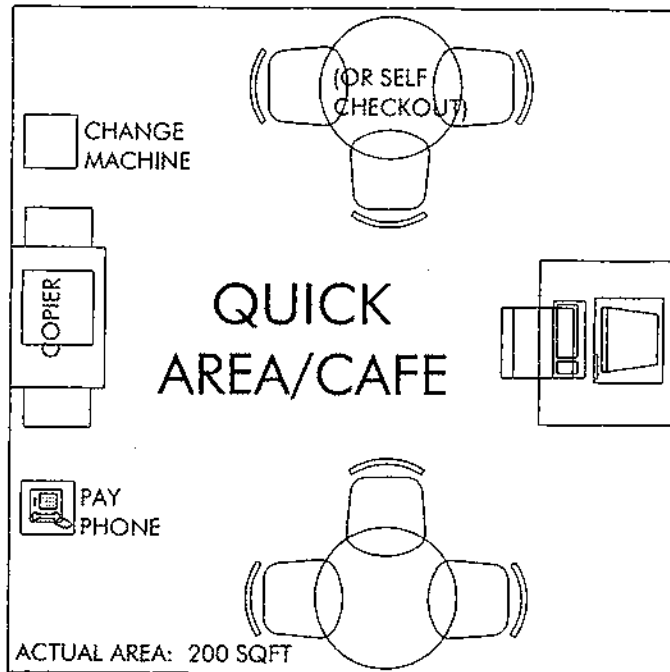
Furnishings & Equipment : Shelving
Stool
Ladder

Shelf Height

Vol per LF

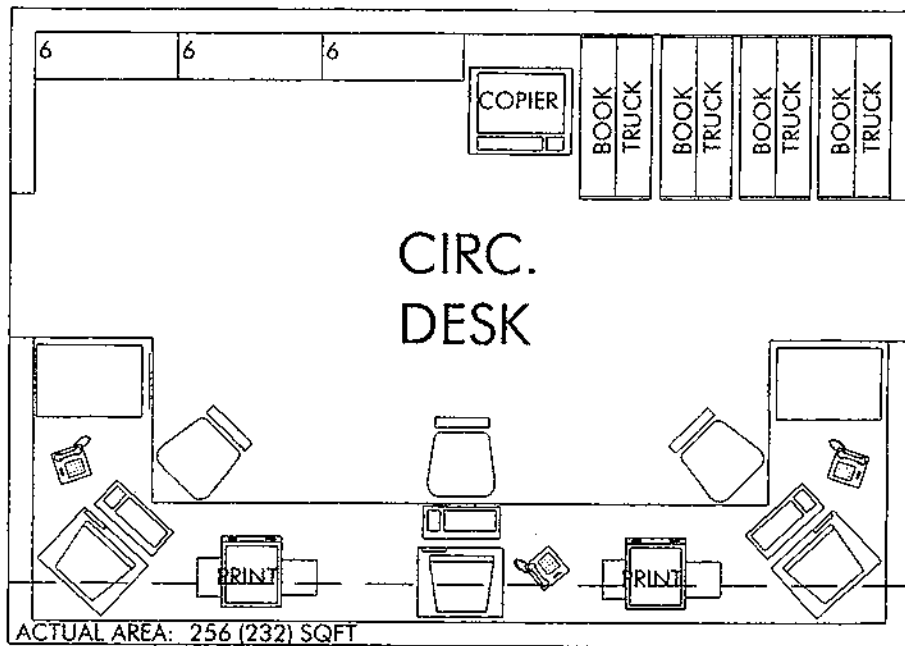
Stack Units

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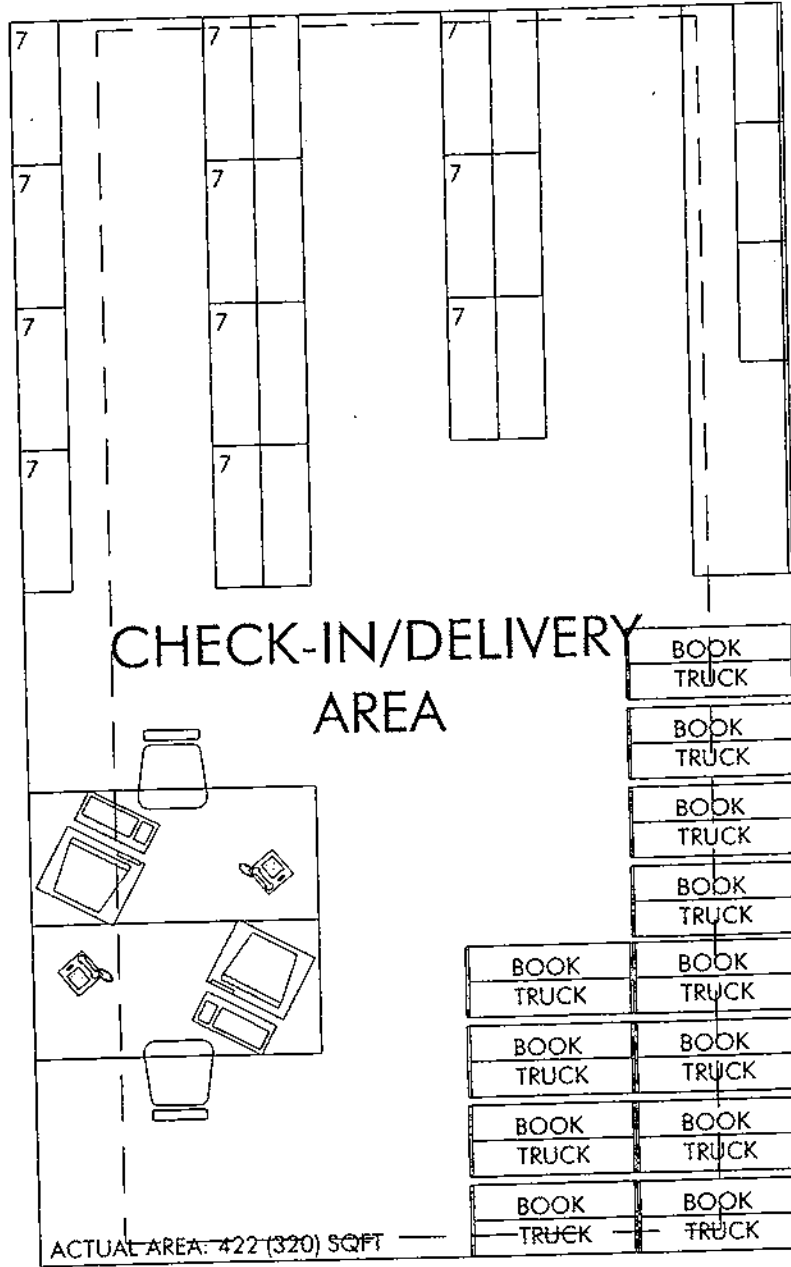
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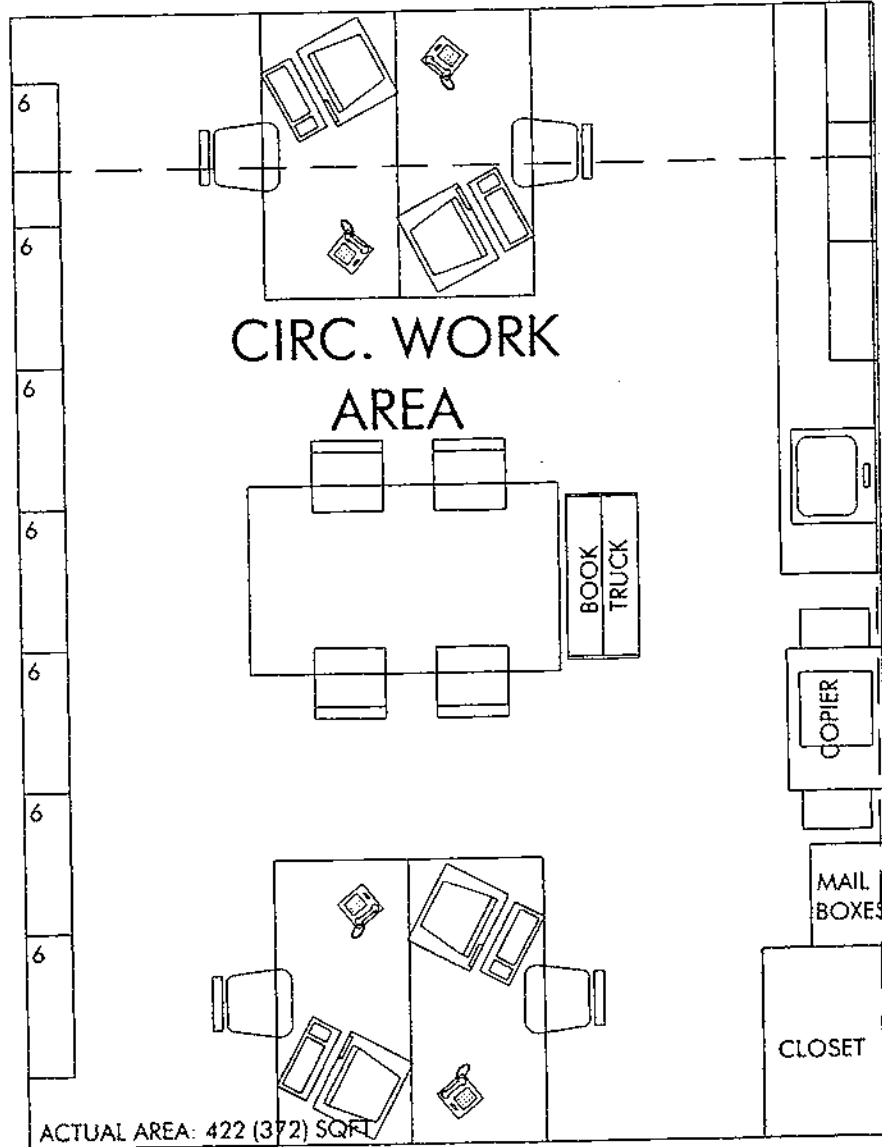
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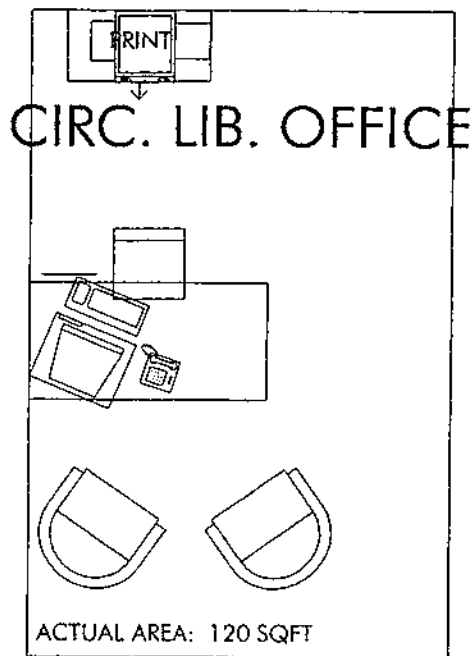
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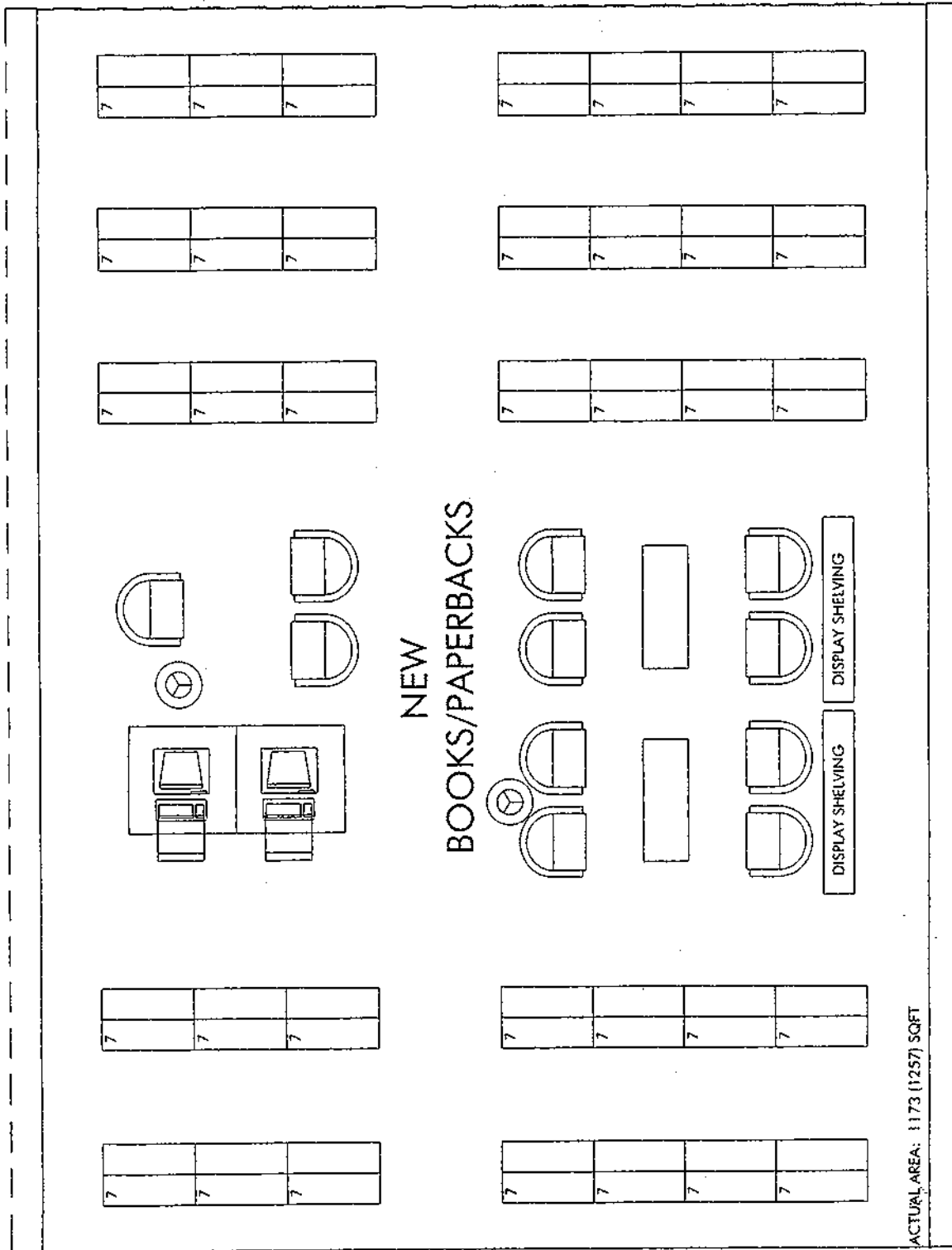
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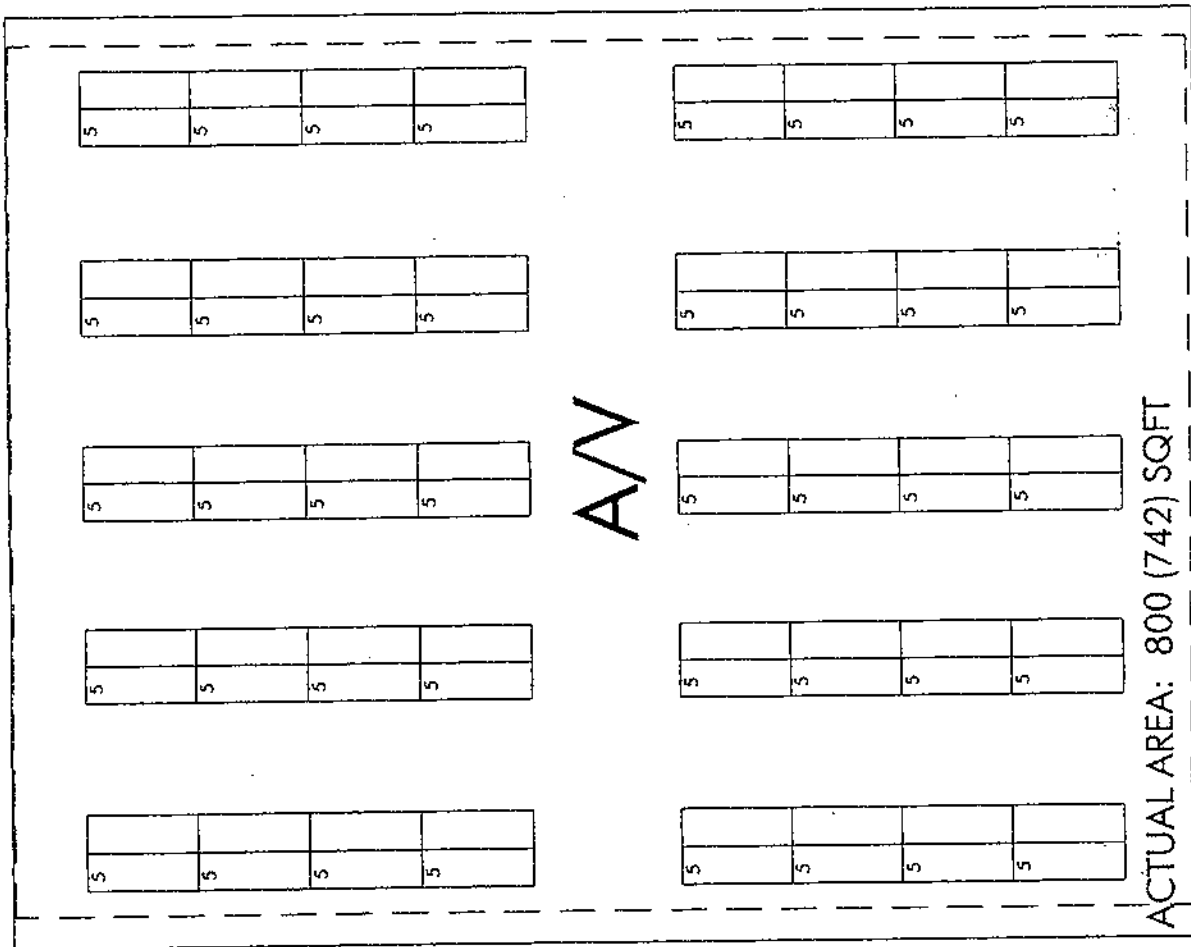


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TAPPE <small>ARCHITECTURE & INTERIORS</small> <small>100 STATE STREET</small> <small>BELMONT, MASSACHUSETTS 02458</small>	BELMONT MEMORIAL LIBRARY Belmont, Massachusetts	Title: _____ Reference: _____ Date: _____
	JACOB TAPPE CORP. BELMONT, MASSACHUSETTS	



TAPPE ASSOCIATES, INC. ARCHITECTS 1111 STATE ST. BOSTON, MA 02118 617-552-1111	Title:
	Reference:
DATE: 11/14/01	Date:

BELMONT MEMORIAL
LIBRARY
Belmont, Massachusetts

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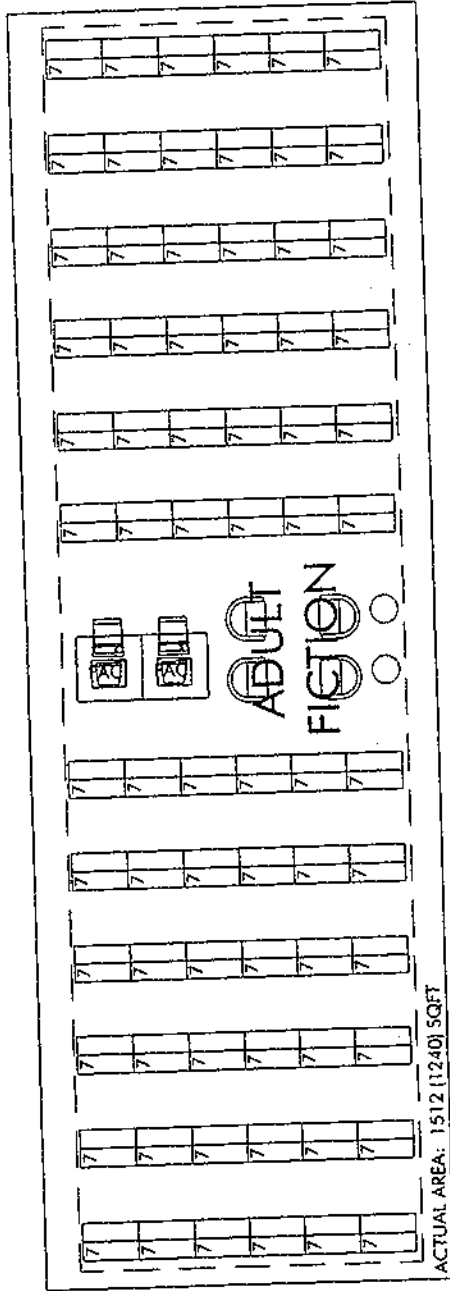
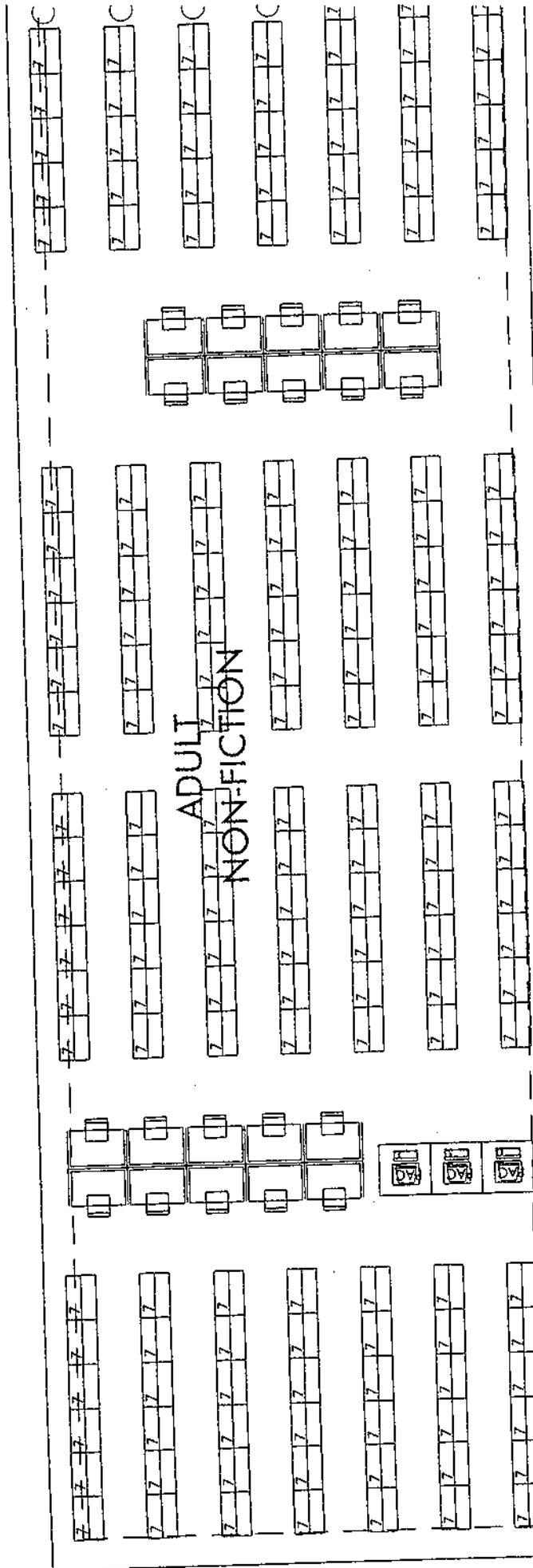


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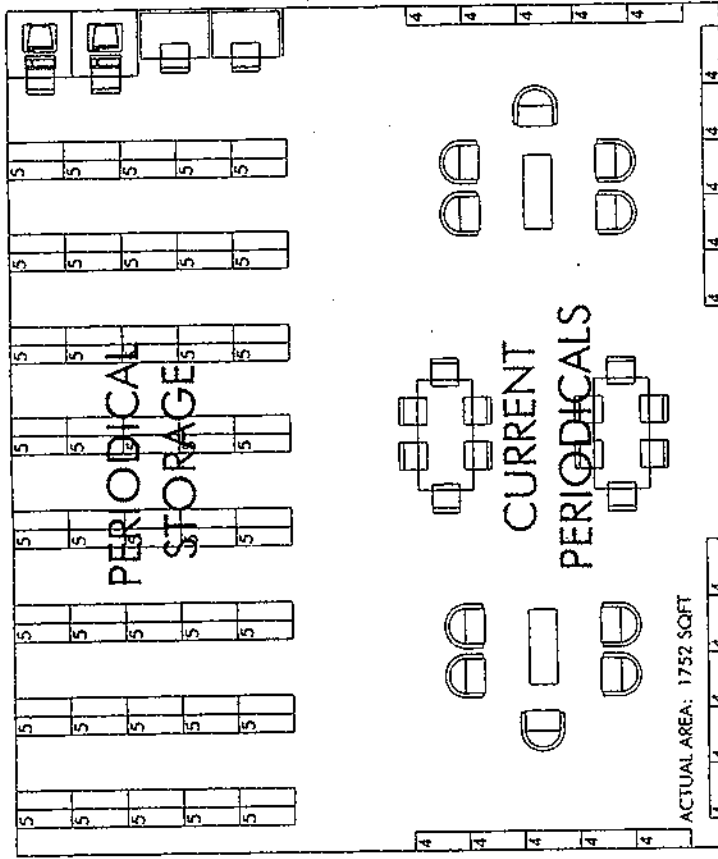
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ACTUAL AREA: 3827 (3285) SQFT

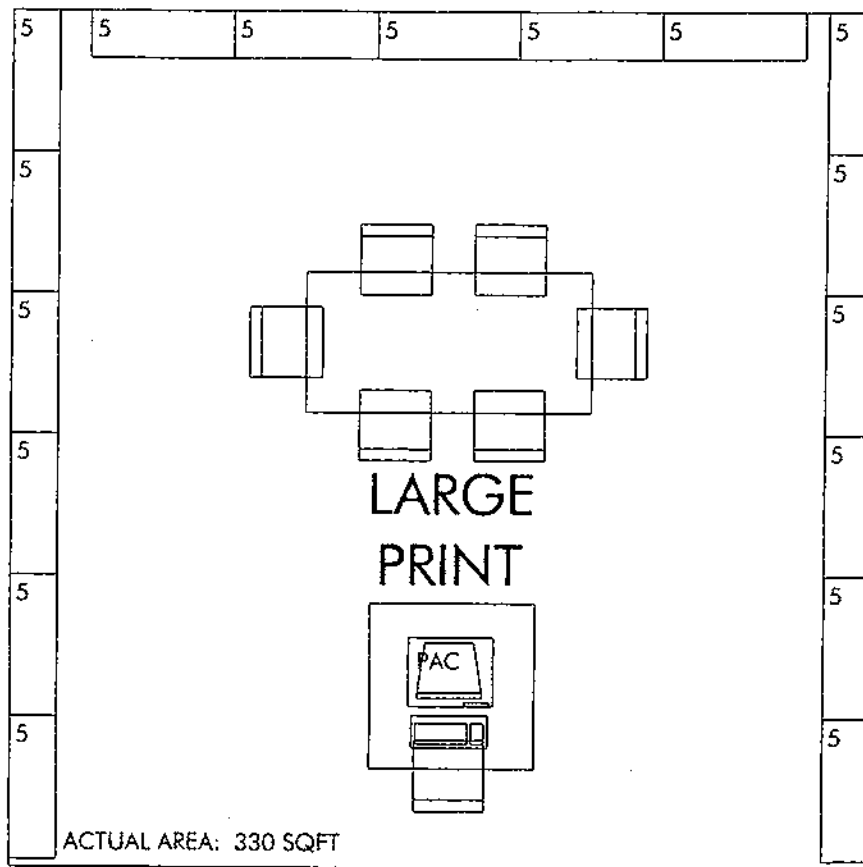
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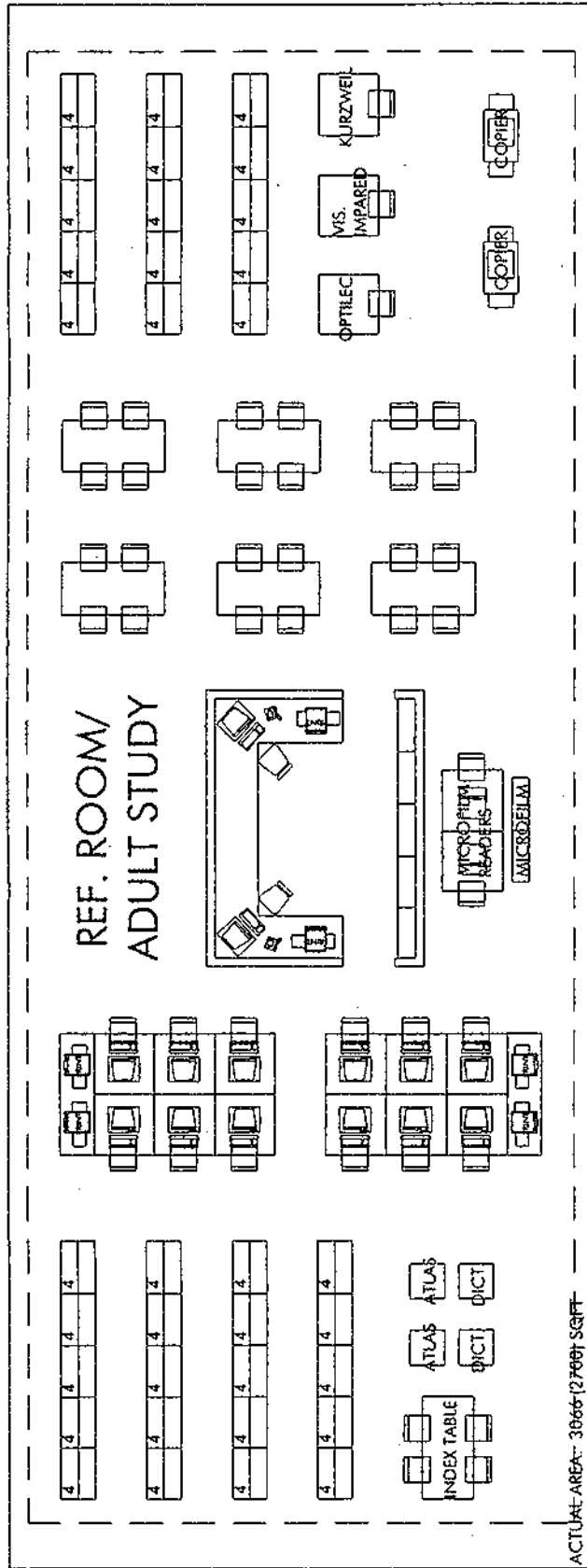
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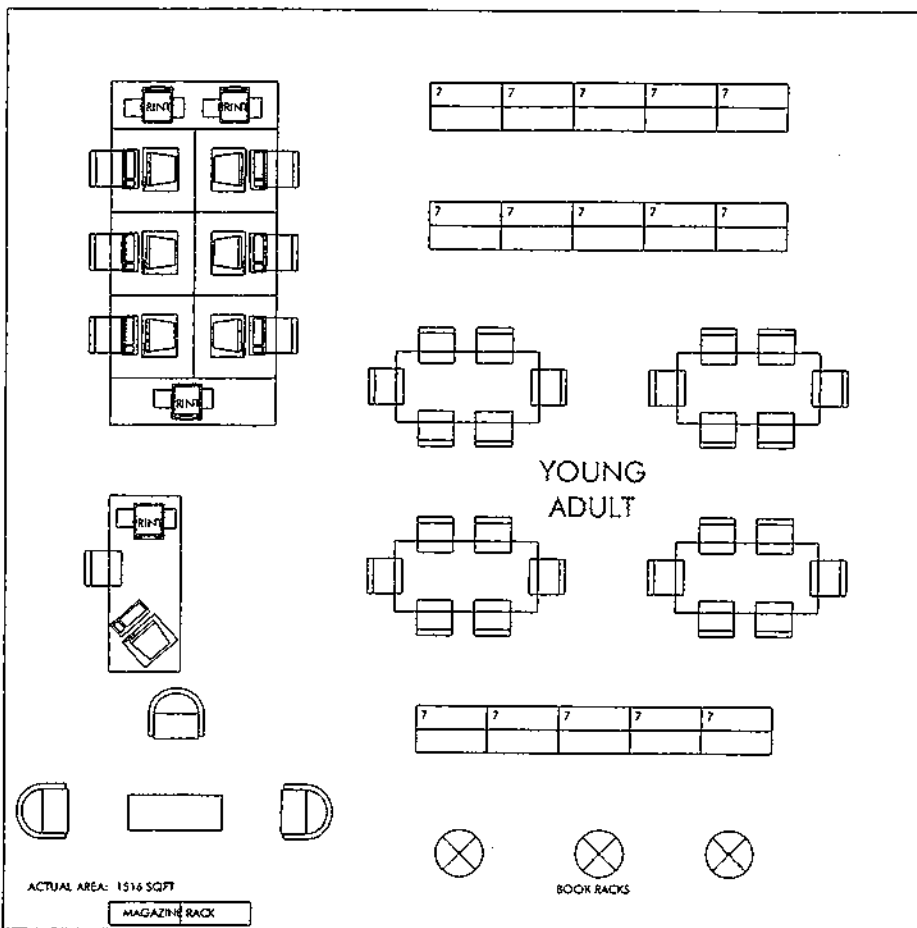
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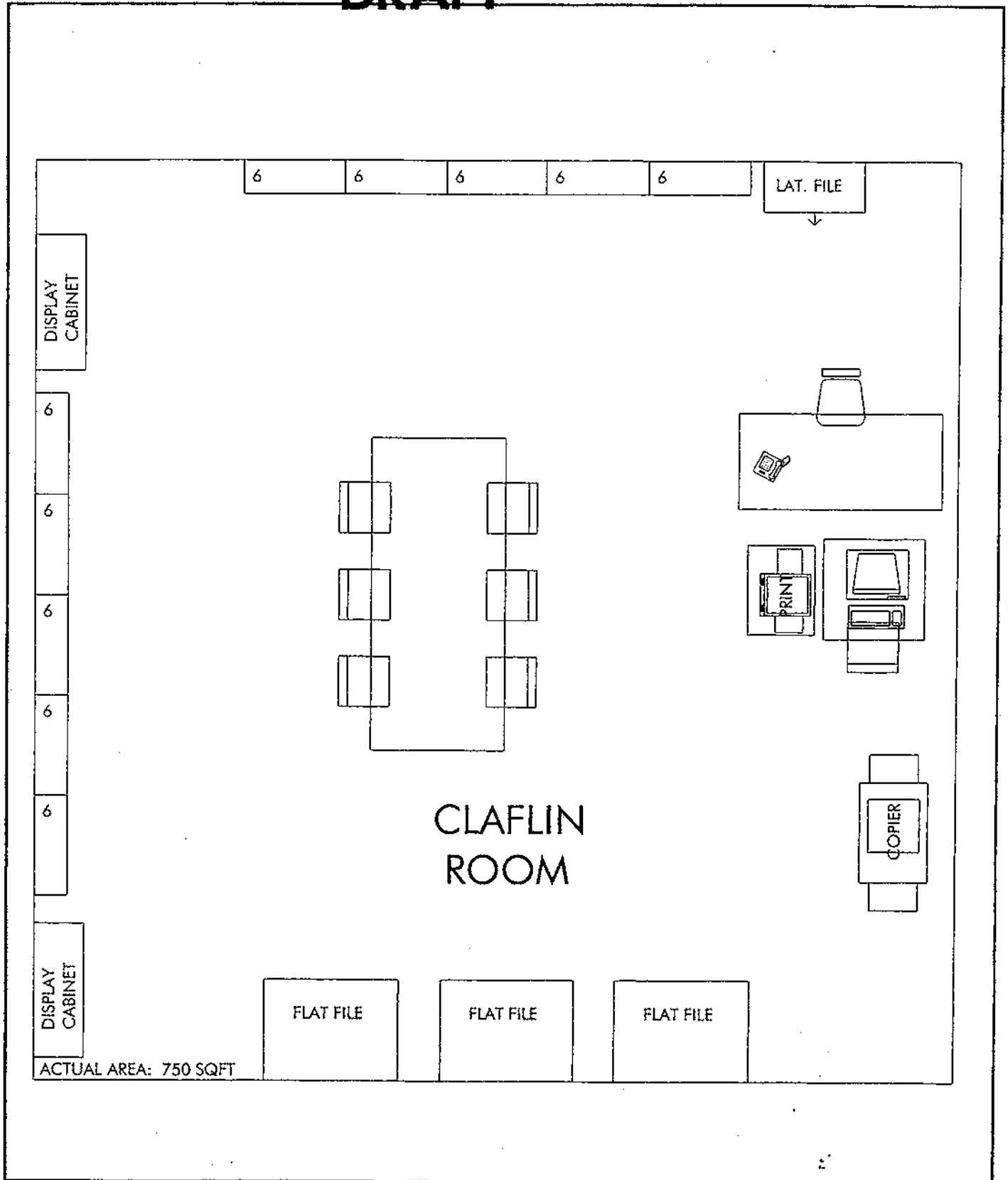
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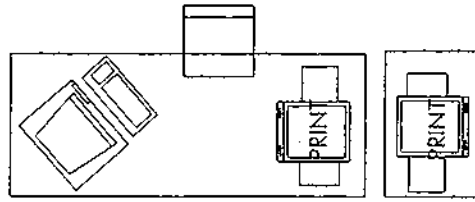
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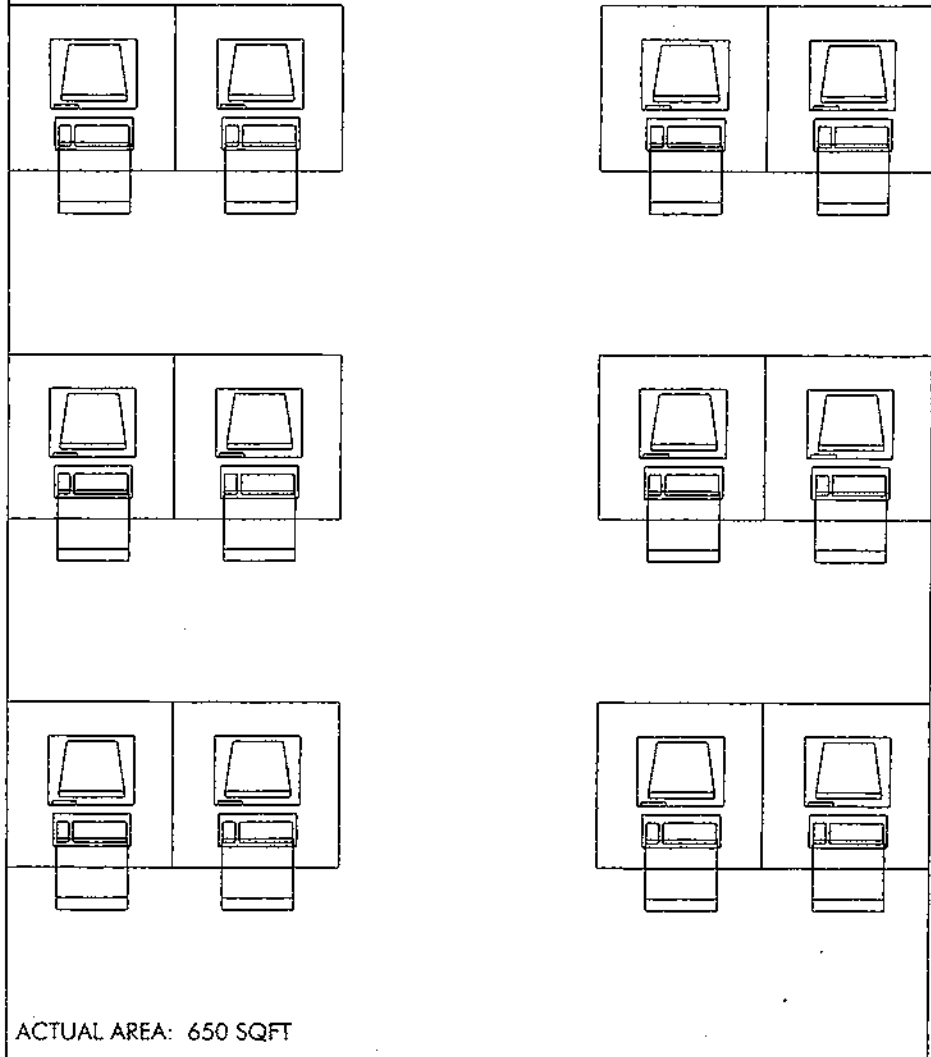


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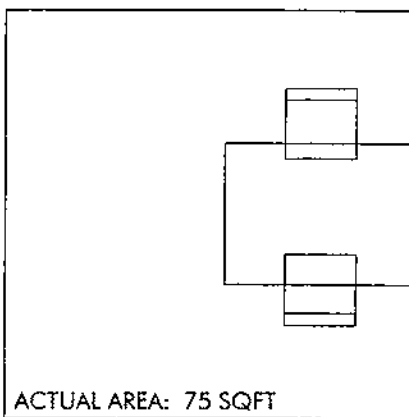
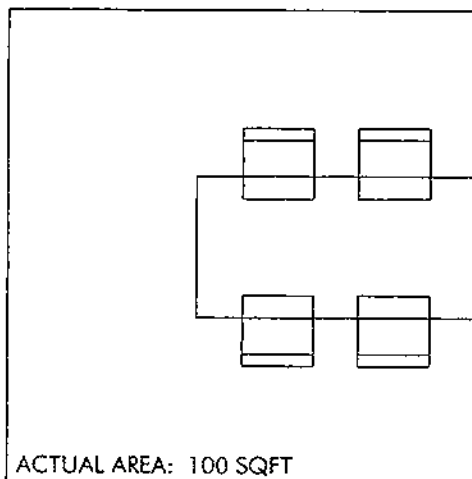
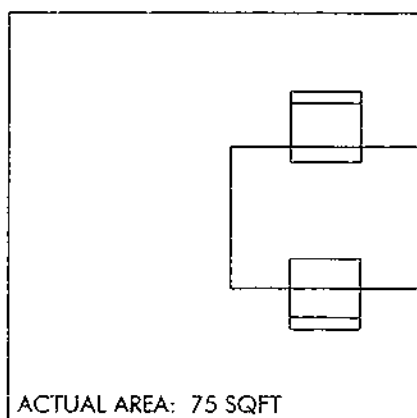
COMPUTER LAB



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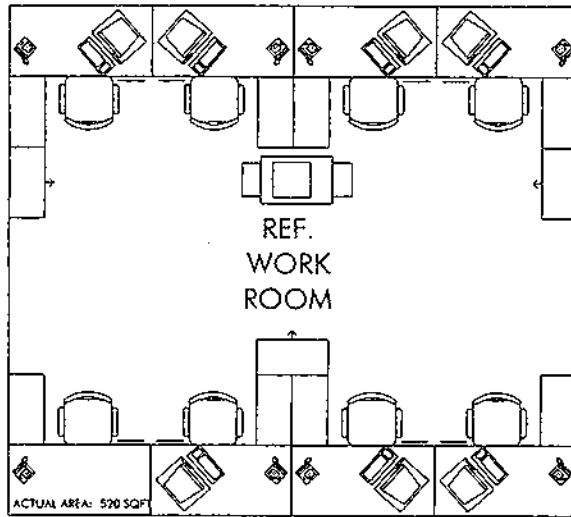
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STUDY ROOMS



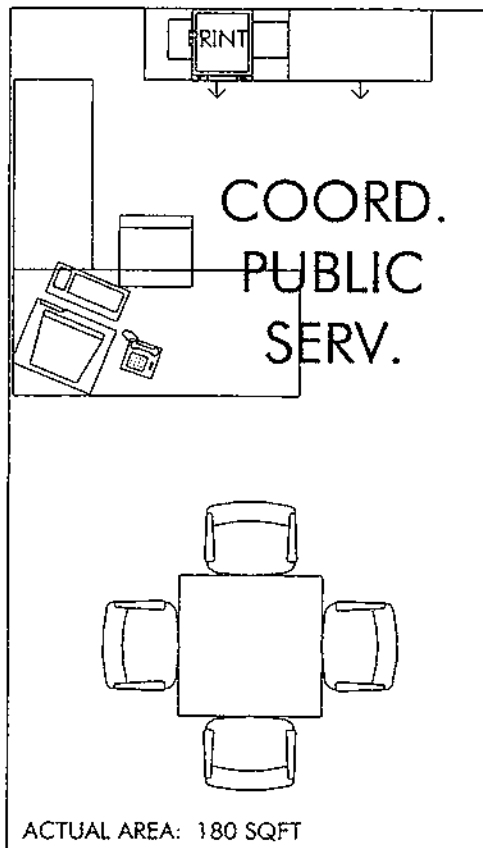
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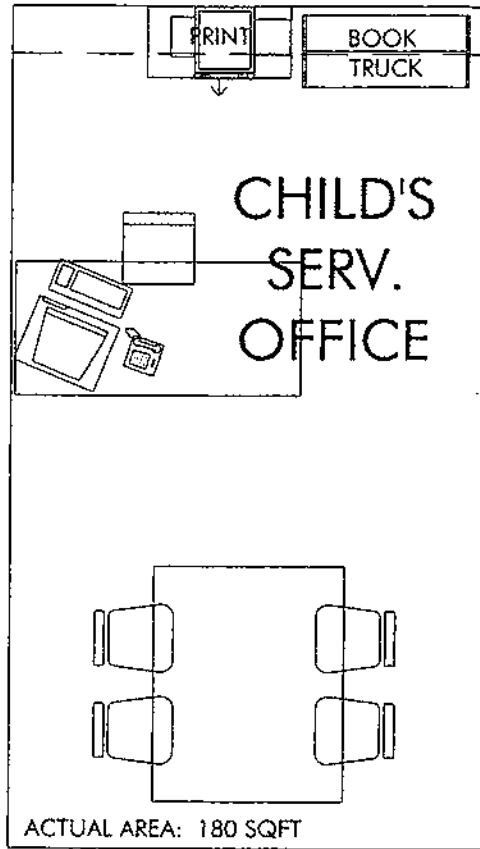
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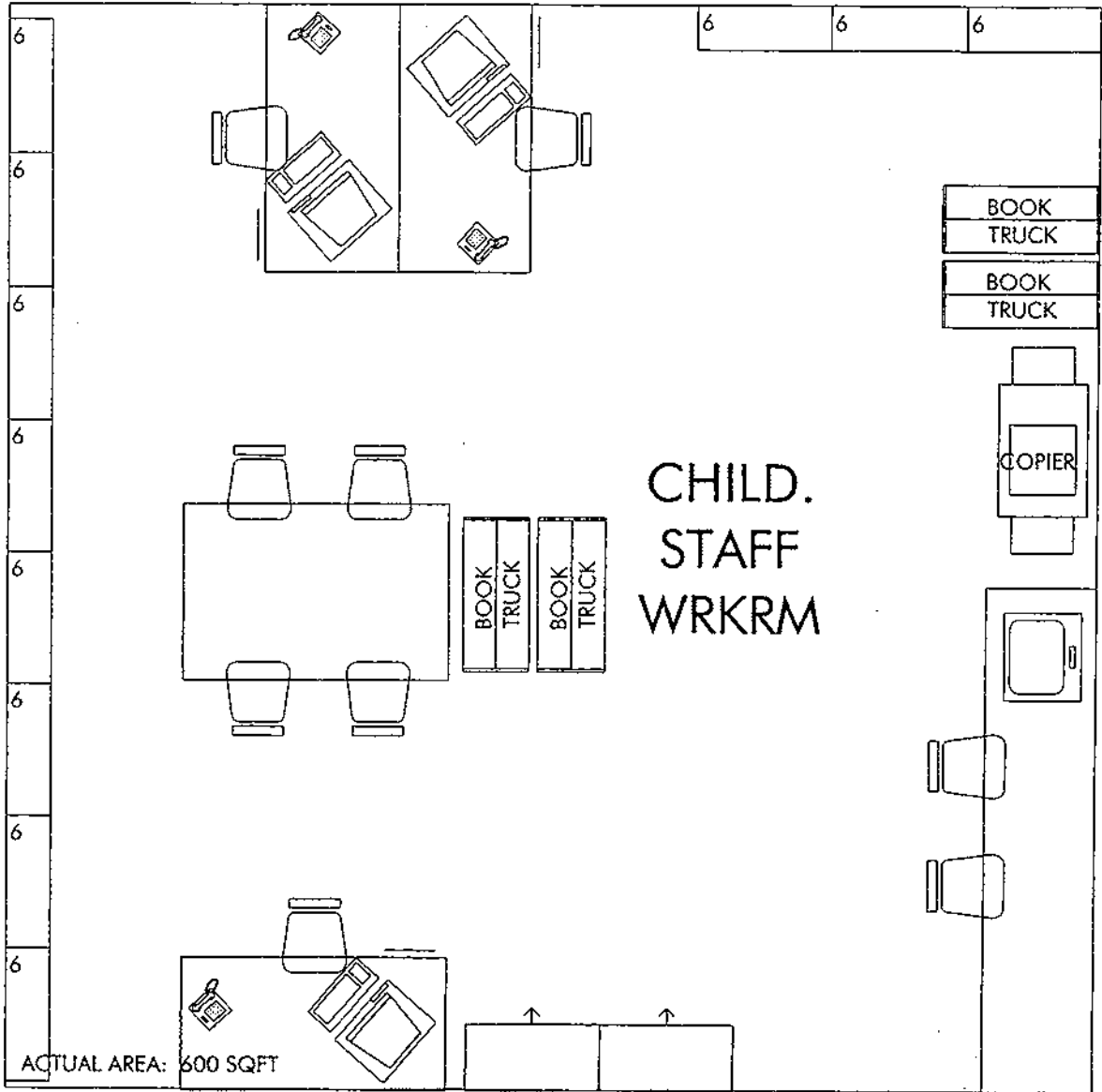
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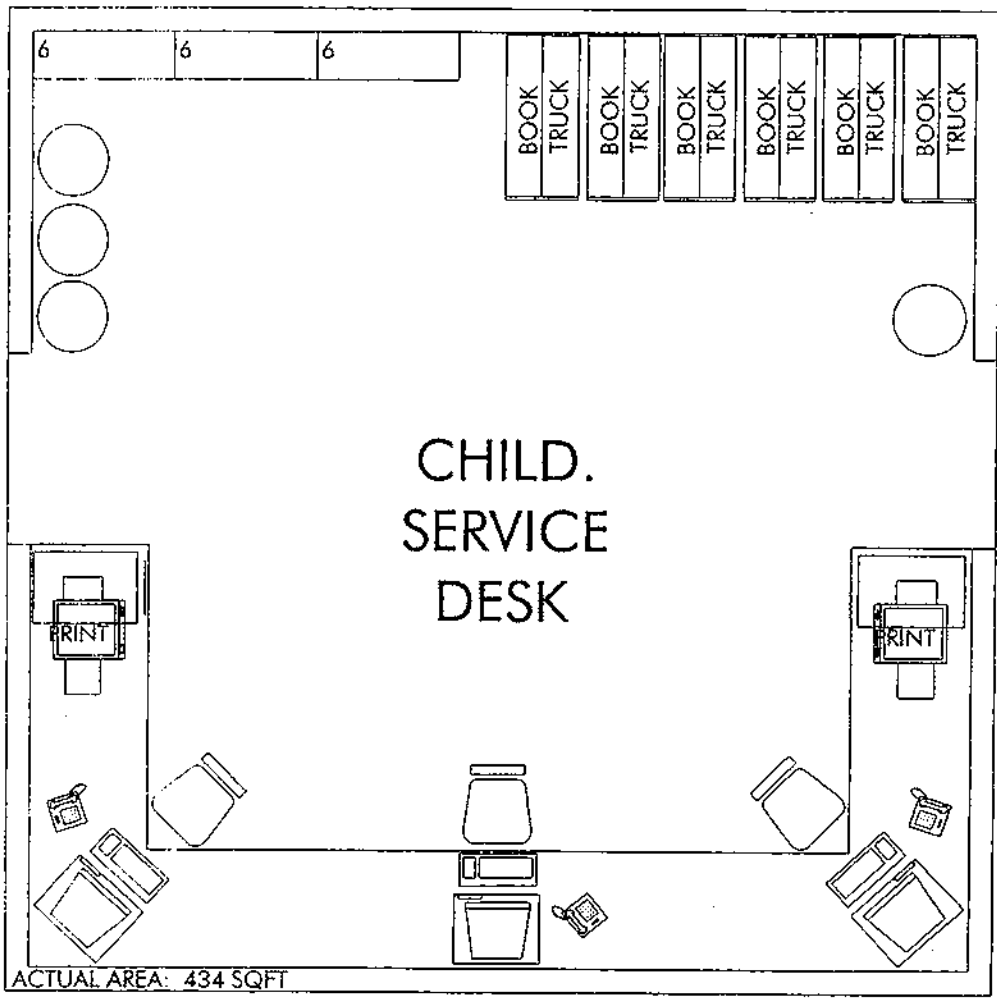
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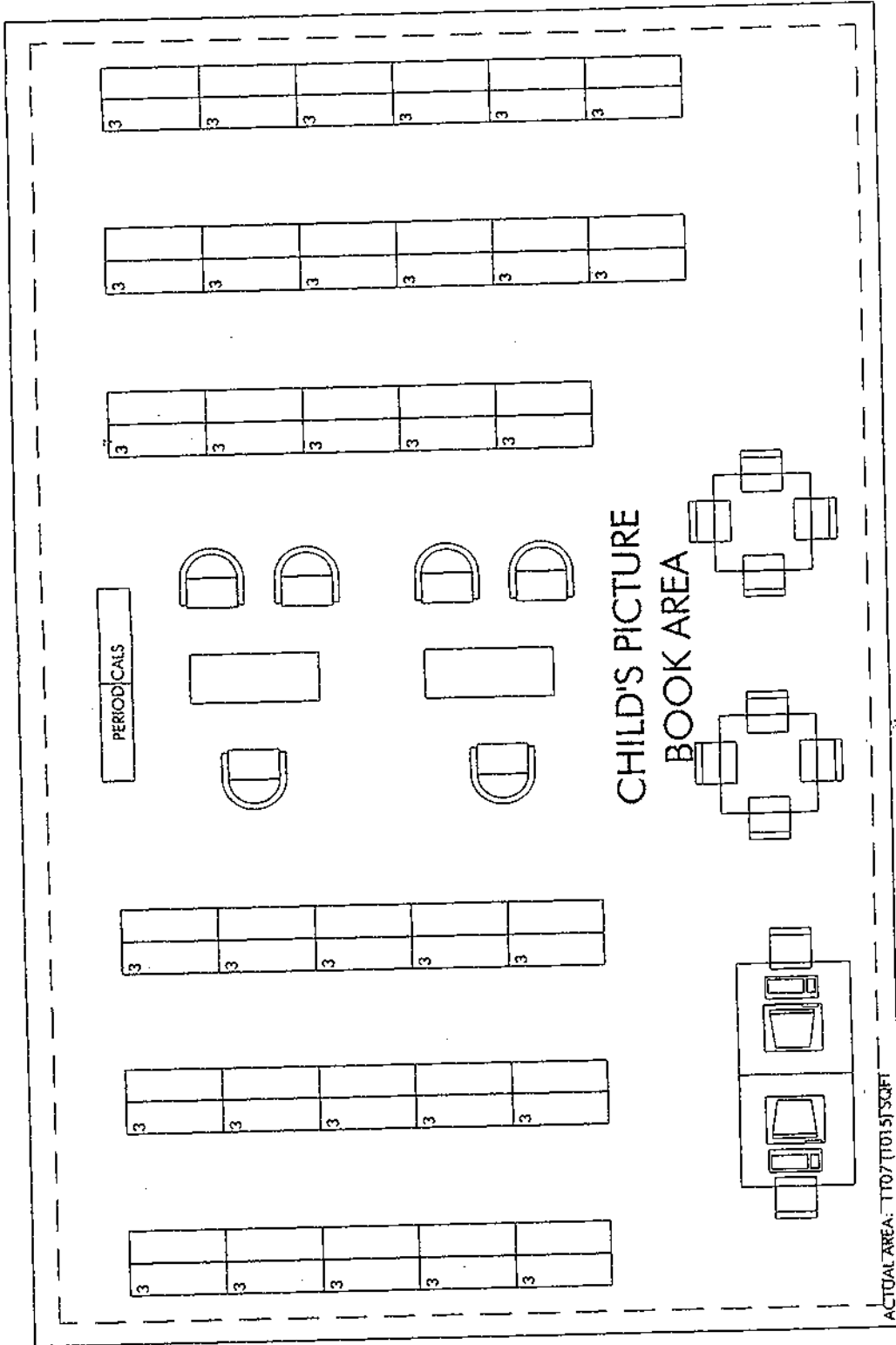


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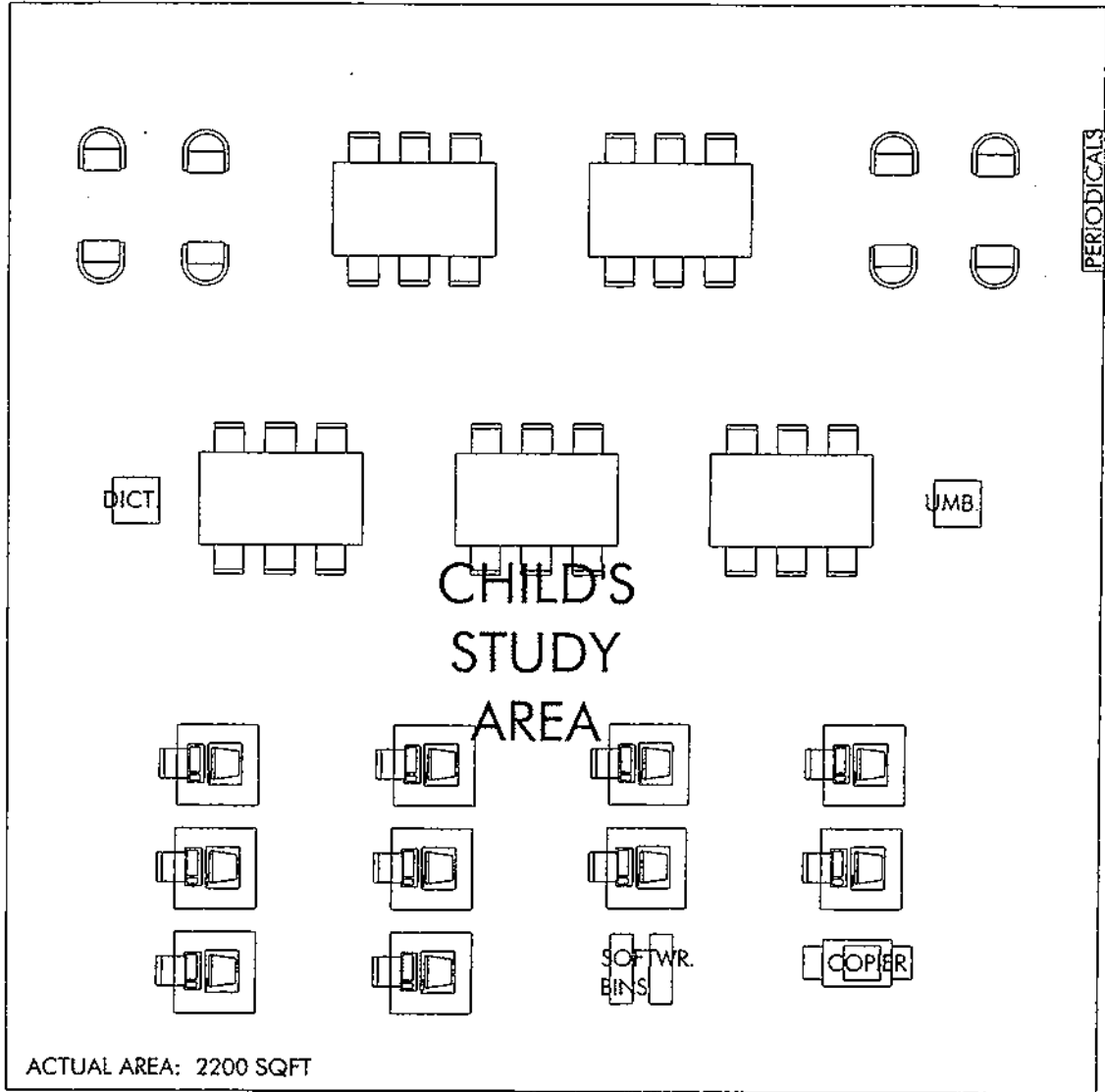
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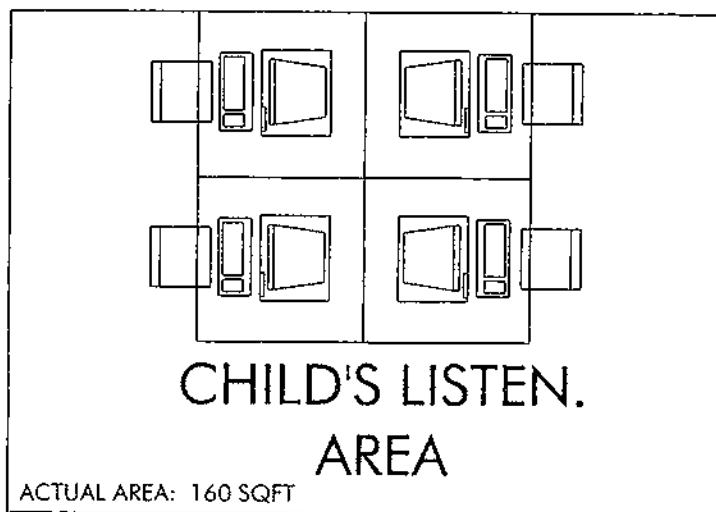
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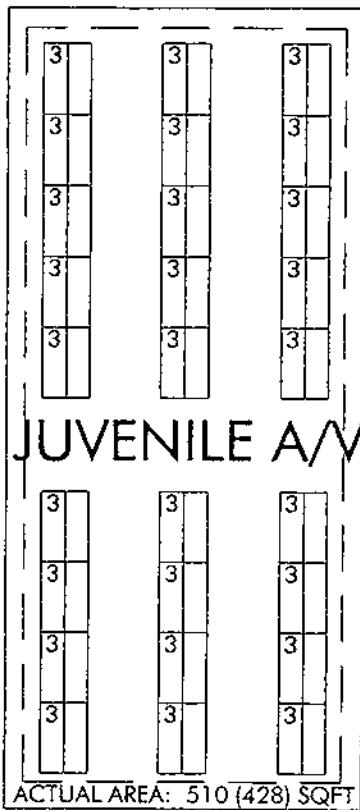
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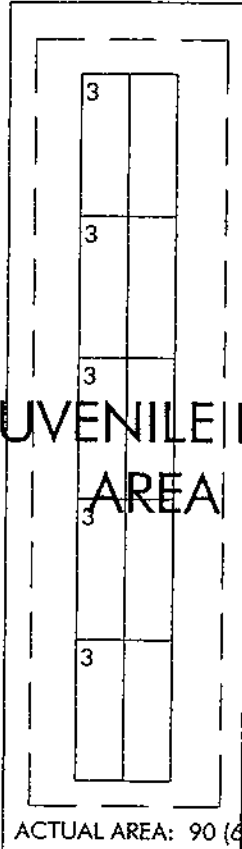
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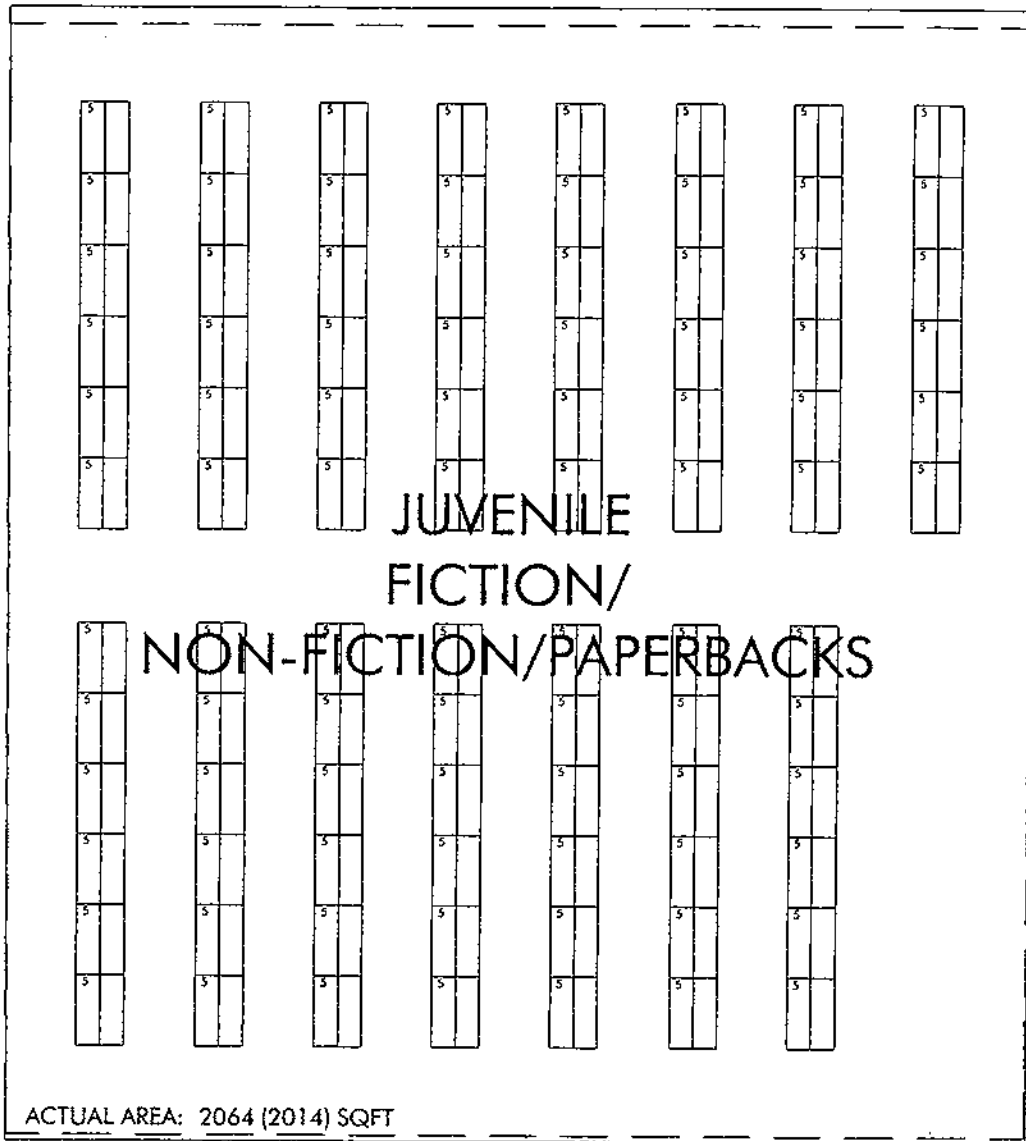
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JUVENILE REF.
AREA

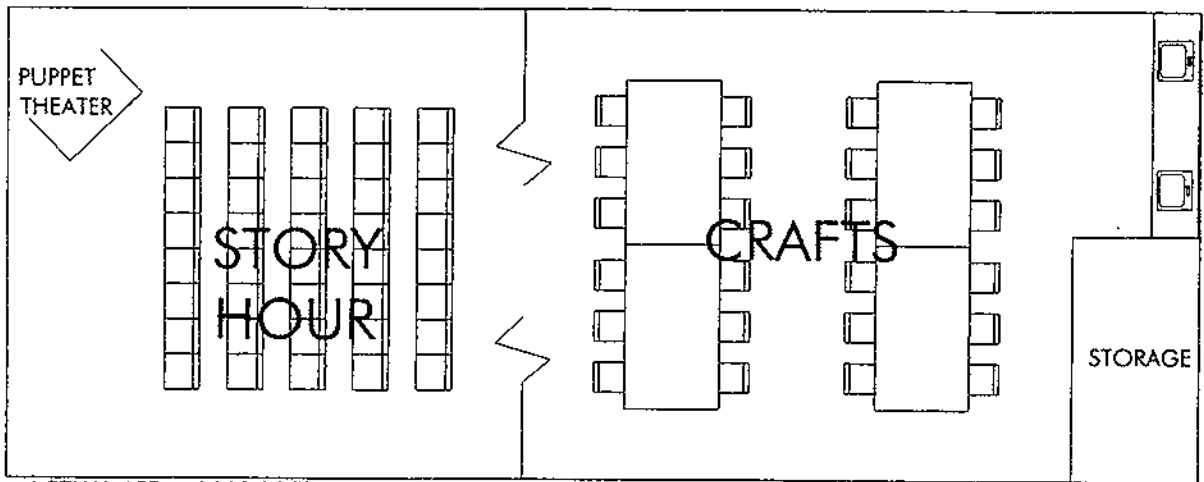
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			Reference Dwg:	
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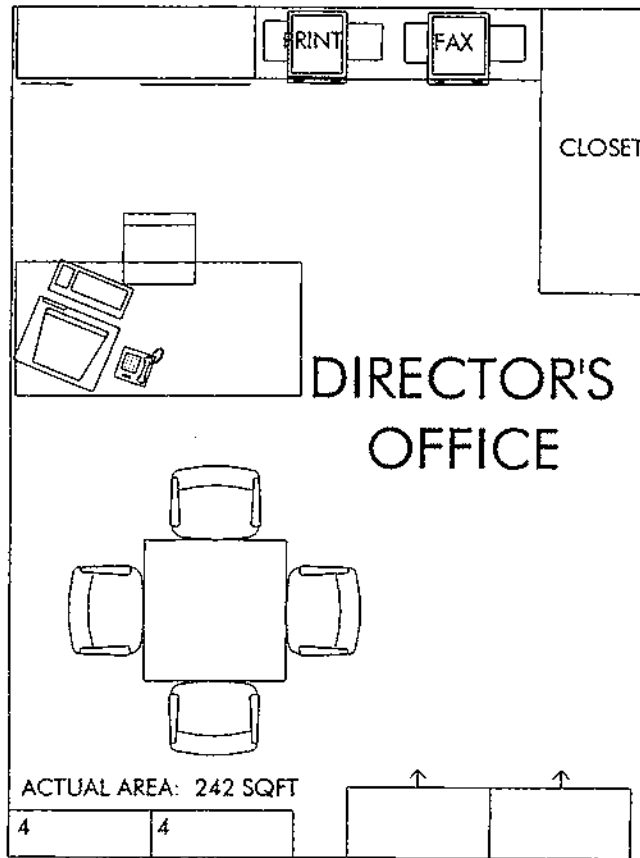
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ACTUAL AREA: 1008 SQFT

	<p>TAPPE ASSOCIATES, INC. ARCHITECTURE PLANNING</p> <p>AAT@TAPPE.COM TEL 617 451 0200 FAX 617 451 3899</p> <p>SIX EDGERLY PLACE BOSTON, MA 02116</p>	<p>BELMONT MEMORIAL LIBRARY Belmont, Massachusetts</p>	<p>Title: STORY HOUR/ CRAFTS</p>		
			<p>Reference Dwg:</p>		
			<p>Date: 7/14/00</p>	<p>Dwg. No.: SK-28</p>	
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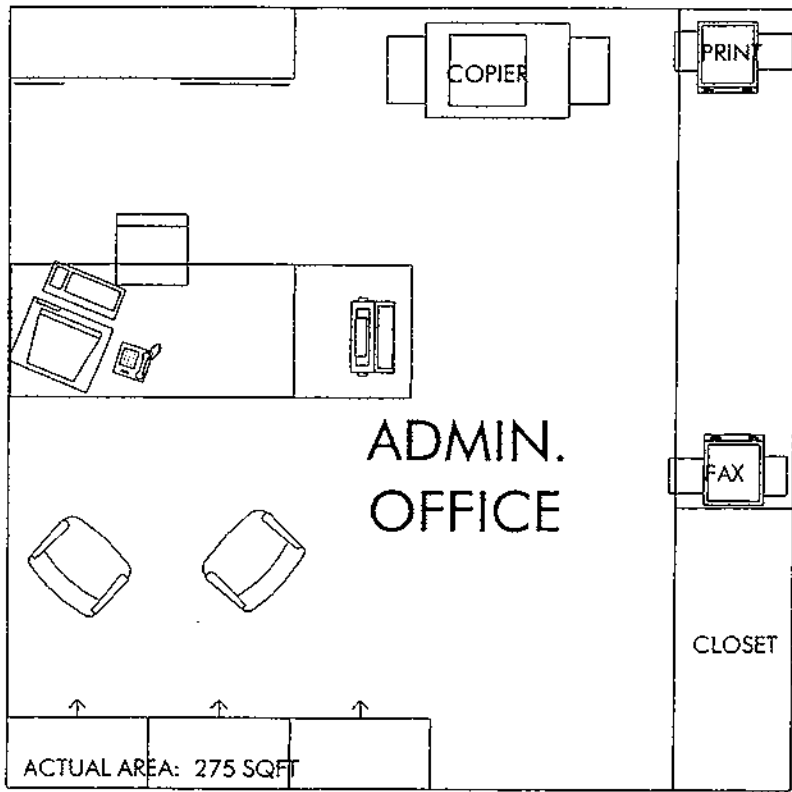
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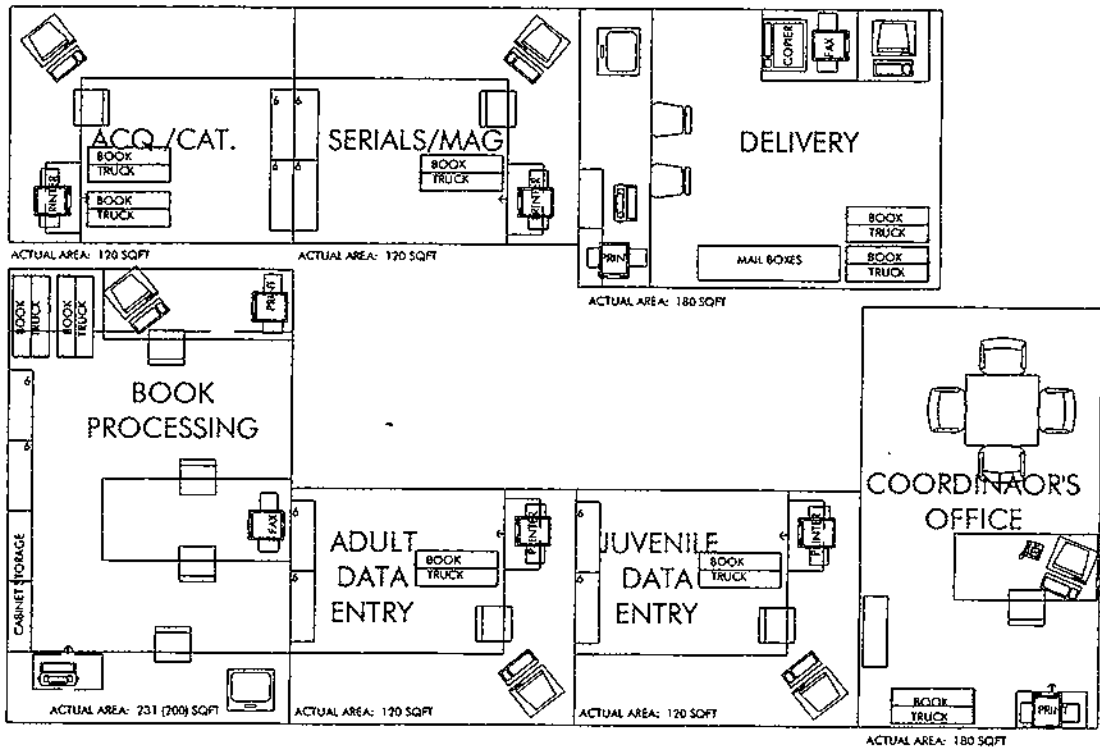


	TAPPE ASSOCIATES, INC. ARCHITECTURE & PLANNING	BELMONT MEMORIAL LIBRARY Belmont, Massachusetts	Title: ASSISTANT DIRECTOR'S OFFICE	
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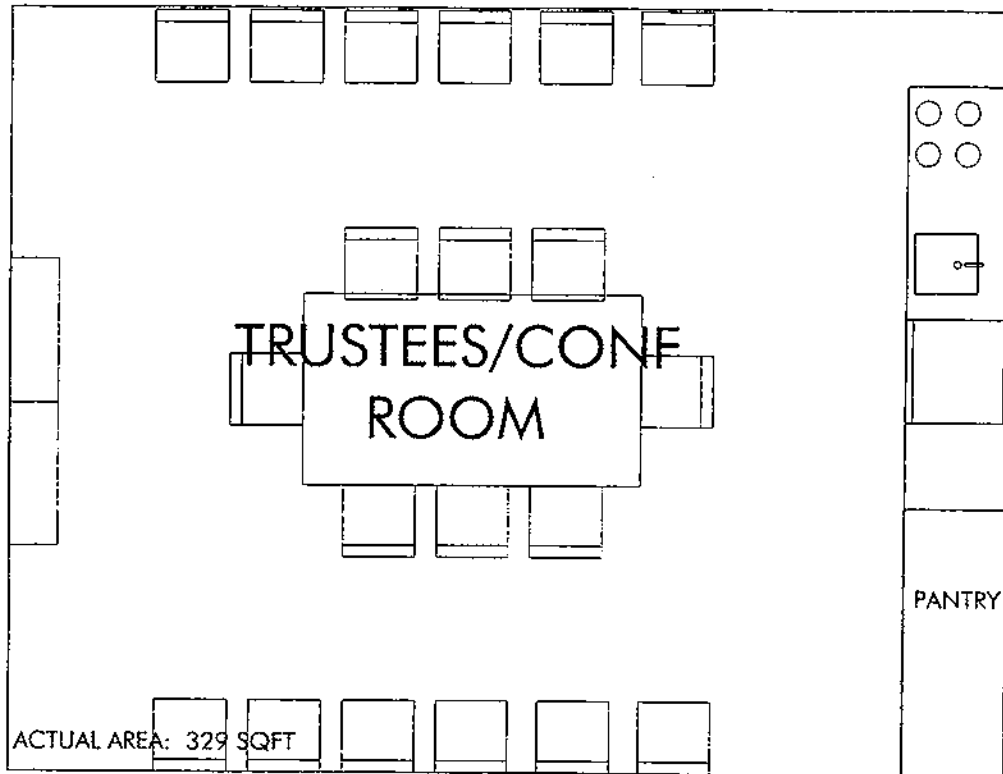


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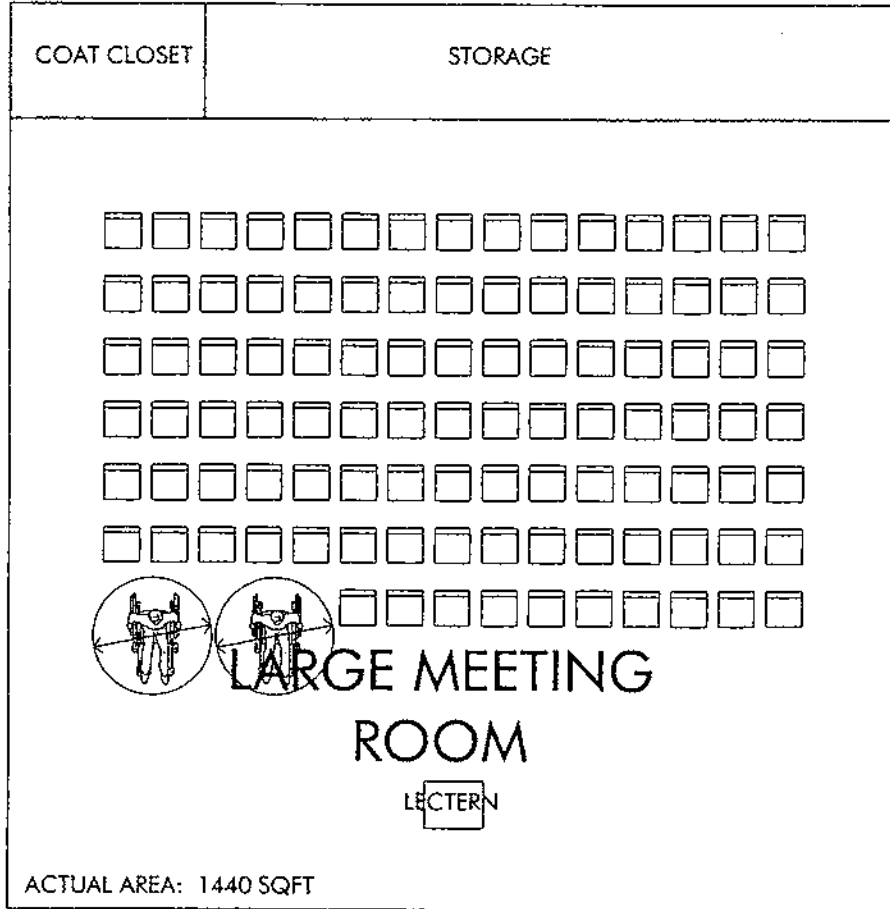
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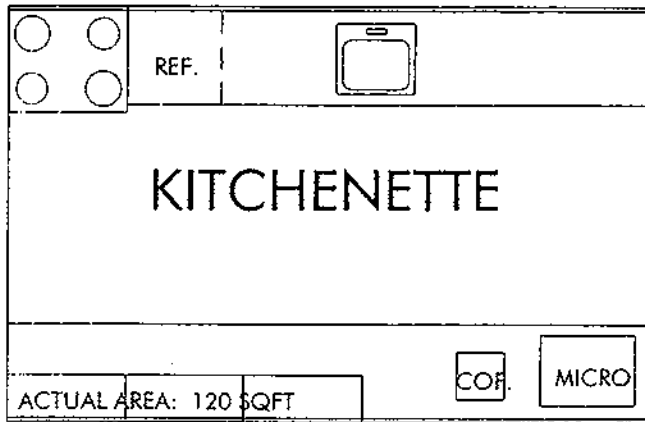
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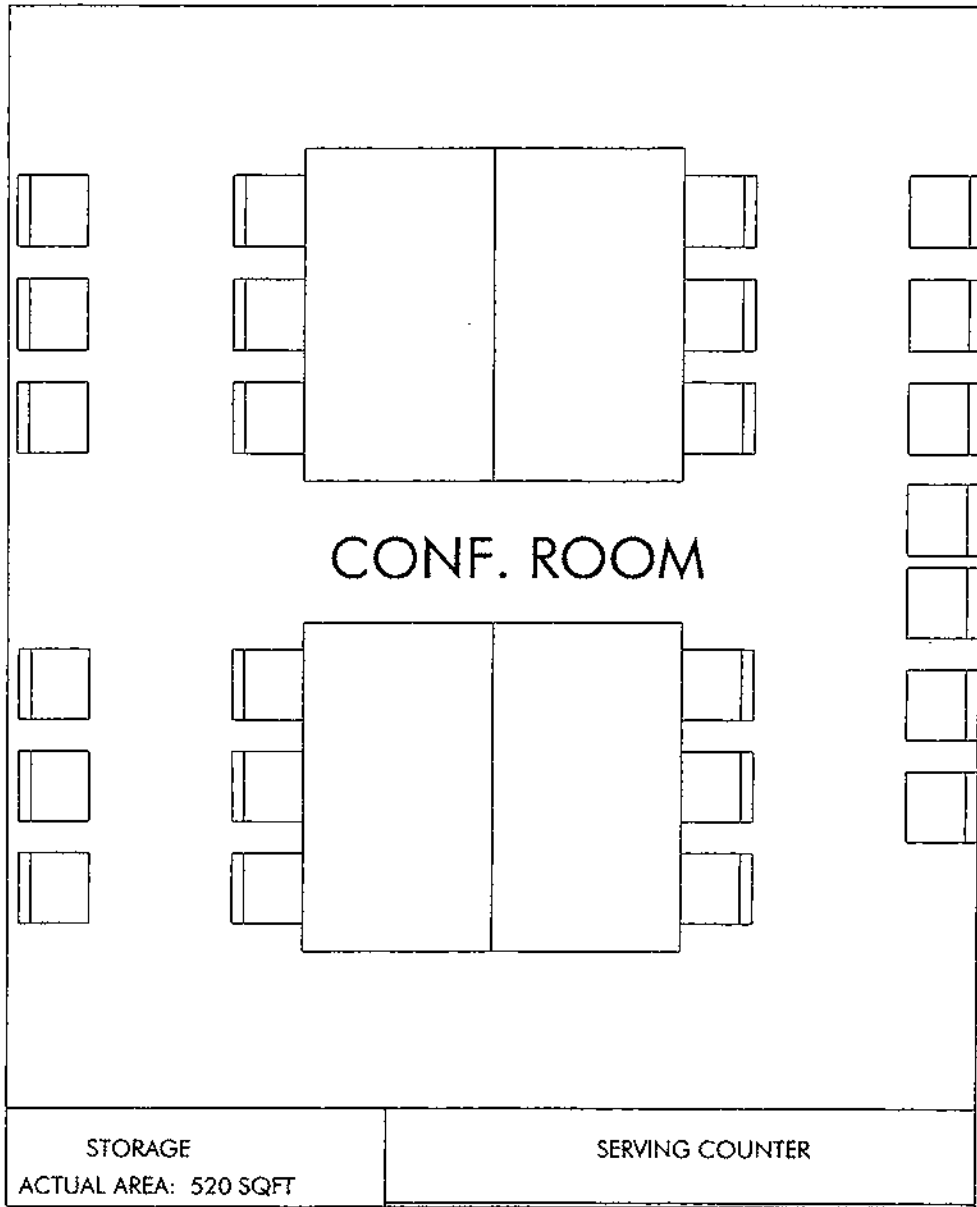
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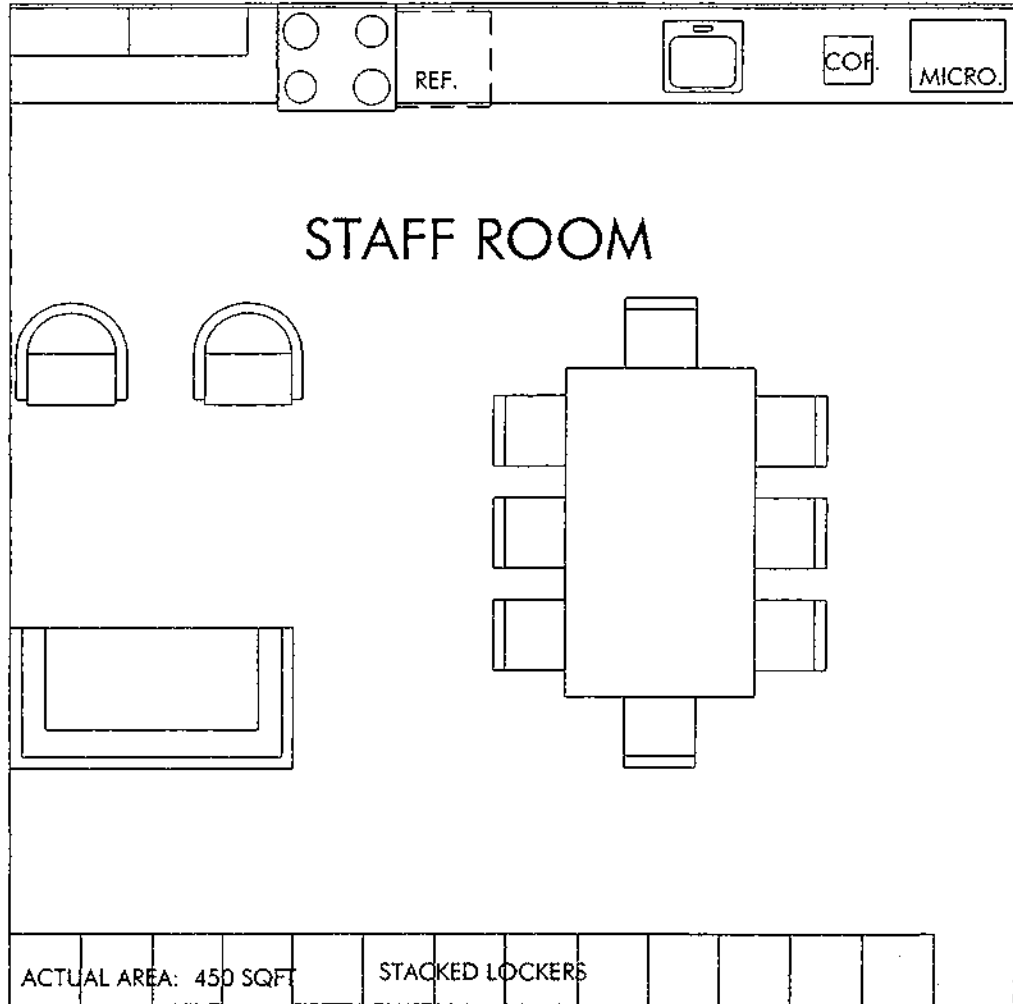
	TAPPE ASSOCIATES, INC. ARCHITECTURE & PLANNING	BELMONT MEMORIAL LIBRARY Belmont, Massachusetts	Title: KITCHENETTE	
			Reference Dwg:	
	SAT @ TAPPE .COM TEL 617 451 0200 FAX 617 451 3899 516 EDGERLY PLACE BOSTON, MA 02116		Date: 7/14/00	Dwg. No.: SK-35
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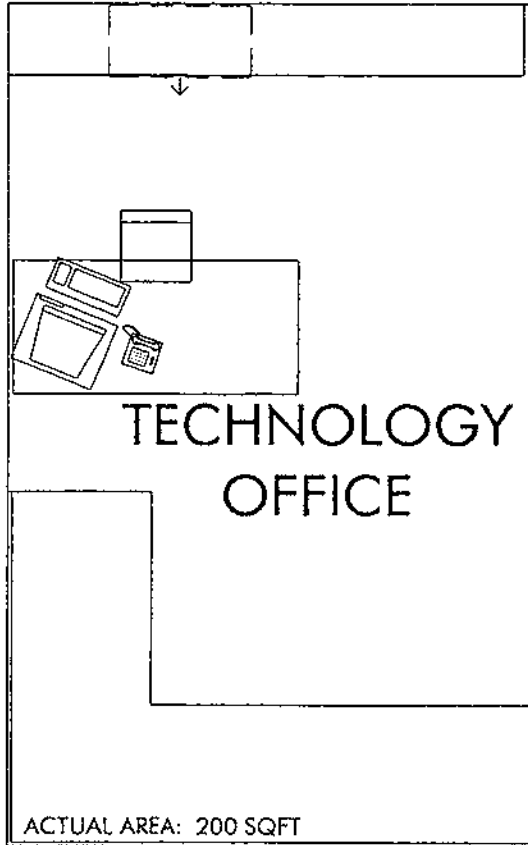
TAPPE ASSOCIATES, INC. ARCHITECTURE PLANNING AAT@TAPPE.COM TEL 617 451 0200 FAX 617 451 3899 516 EDGERLY PLACE BOSTON, MA 02116	BELMONT MEMORIAL LIBRARY Belmont, Massachusetts	Title: CONFERENCE ROOM	
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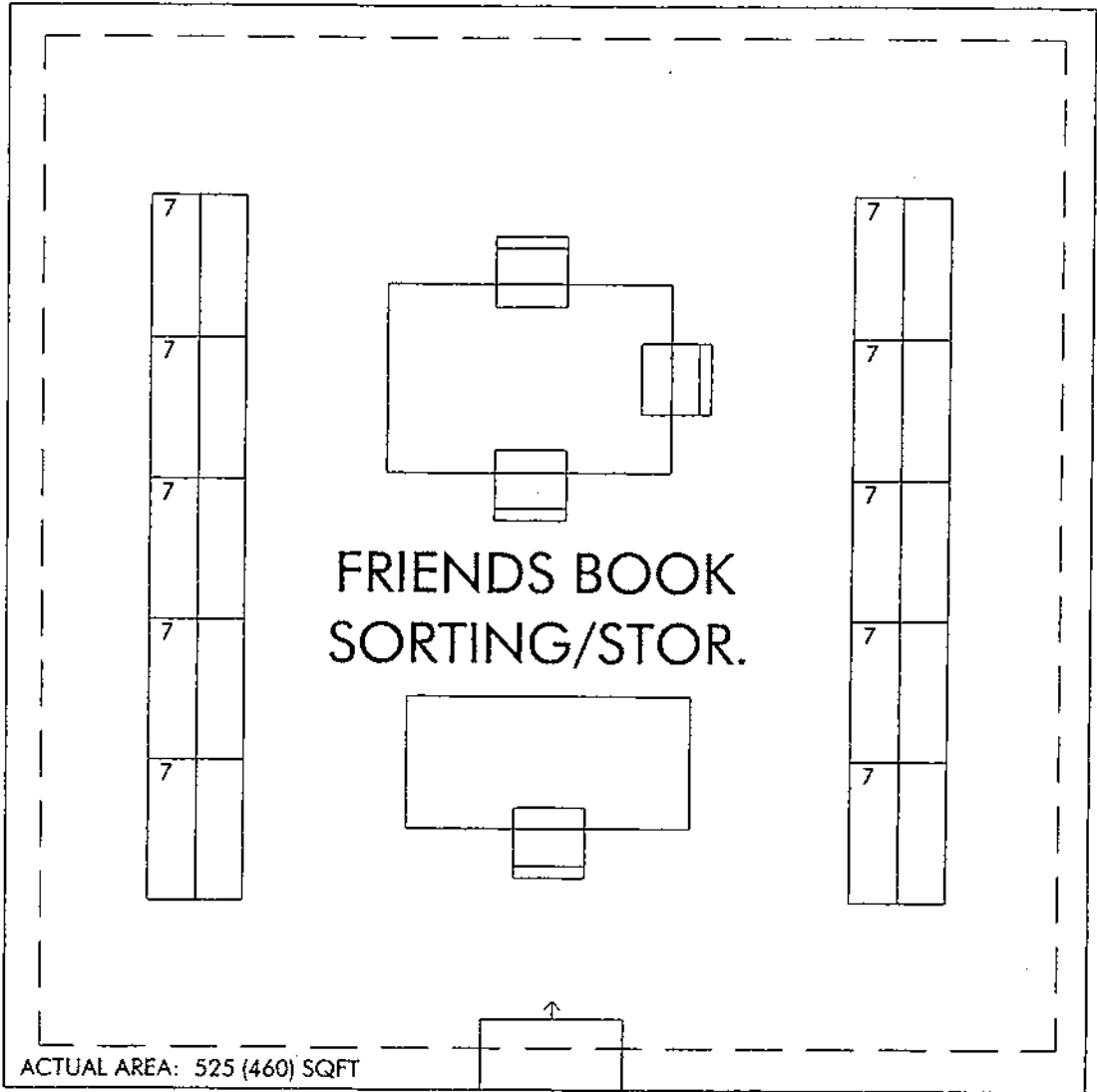
TAPPE ASSOCIATED, INC. ARCHITECTURE & PLANNING	BELMONT MEMORIAL LIBRARY Belmont, Massachusetts	Title: STAFF ROOM	
		Reference Dwg:	
		Date: 7/14/00	Dwg. No.: SK-37
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	TAPPE ASSOCIATES, INC. ARCHITECTURE & PLANNING AAT@TAPPE.COM TEL 617 451 0200 FAX 617 451 3899 516 EDGERLY PLACE BOSTON, MA 02116	BELMONT MEMORIAL LIBRARY Belmont, Massachusetts	Title: TECHNOLOGY OFFICE	
			Reference Dwg:	
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	TAPPE <small>ASSOCIATES, INC.</small> ARCHITECTURE PLANNING	BELMONT MEMORIAL LIBRARY Belmont, Massachusetts	Title: FRIENDS BOOK SORTING & STORAGE		
	AAT@TAPPE.COM TEL 617 451 0200 FAX 617 451 3899 SIX EDGERLY PLACE BOSTON, MA 02116	Reference Dwg:		Date: 7/14/00	
		Dwg. No.: SK-39		Scale: 1/4" = 1'-0"	
				Master No.:	Project No.: 0008.0

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Belmont Memorial Library Belmont, MA



FEASIBILITY STUDY

March 2001

APPENDIX 2 Engineering Reports

LeMessurier Consultants

DRAFT

675 Massachusetts Avenue, Cambridge, MA 02139
Tel: (617)868-1200 Fax: (617)661-7520

BELMONT M. L.
C. 05

June 7, 2000

Mr. Drayton Fair, A.I.A.
Tappe Associates, Inc.
Six Edgerly Place
Boston, MA 02116

RECEIVED
JUN 13 2000
TAPPE ASSOCIATES, INC.

Reference: Belmont Public Library Study - Belmont, MA
LeM File No. 20131

Dear Drayton:

This letter summarizes our findings regarding the present condition of the structure of the Belmont Public Library Building in Belmont, Massachusetts, as well as our recommendations regarding future uses of this structure. These observations and recommendation are based on information provided to us by your office, as well as our field observations of June 1, 2000. The existing structural drawings for this building are very complete, and as such we have a thorough understanding of the building's framing, and load-carrying capacities. Our field observations were only visual surface observations; we have not cut any holes in building finishes to verify structure, nor have we done any testing to determine the structure's underlying condition.

Existing Conditions

On June 1, 2000, I toured the existing Belmont Public Library Building with the building's maintenance supervisor. The existing Belmont Public Library is a three-story, steel-framed with exterior masonry bearing wall structure with a brick veneer. This building was built in 1964 to be the Town's Public Library and has functioned as such ever since. The structure has a basic "H" shape, a central section with symmetrical wings. The ground floor is framed with precast prestressed double T's with a 2" concrete topping slab supported on concrete foundation walls and spread footings. Below this level is a crawl space with a dirt floor. The first floor and balcony levels are each framed with open-web steel joists and concrete on form deck slabs. The building has a flat, wood-framed roof over the center section, and steep gable wood-framed roof covered with slate on the wings at each end.

The existing floor live load capacities are 125 psf for the ground floor and 100 psf for the first floor and balcony levels. While these load carrying capacities are below the code required loading of 150 psf mandated by today's code for library stack rooms, they appear to be adequate for the present library setup. Should there be future changes to the stack density, these would need to be reviewed, in order not to overload the structure.

While the structure of most of this building is not visible, as walls and ceiling finishes cover the framing, there is no evidence of major structural distress. The central flat section of roof has a membrane roof covering that looks to be in relatively good condition. However, it appears that the addition of a number of roof top mechanical units has deflected the wood framing to the extent that the roof pitches are no longer adequate to fully drain the roof. The slate roofing on the wing gables

is in good condition with only some very minor areas that need repair. The exterior of the building looks good, with only some very minimal cracking of masonry and areas that need repointing. Generally the building appears to be in good condition and well maintained.

Addition/Renovation Feasibility

It is our understanding that you are interested in a number of possible options for renovating and adding to the existing structure, in an effort to add needed space to the library. Our review of the existing drawings indicates that any minor renovations to the existing structure are possible, as long as the masonry bearing walls on the exterior of the building are basically left in tact. Any additions attached directly to the existing structure would have to be kept small, so as not to trigger a complete seismic upgrade of the building (see below). A small roof, over some outside parking at the rear of the building, would be small enough so that it could be connected directly to the existing structure and not pose any structural complications. Any larger addition would need to be separated from the existing structure by an expansion joint.

Generally, minor structural changes required to add or modify stairs, elevators, add mechanical openings, or add roof skylights are fairly simple, and do not have a major impact on the structure. However, any additions and alterations to the existing structures must be kept to less than 10% of the existing building's area and mass, or a major seismic upgrade would be required by the State Building Code. Such an upgrade to the structure would be prohibitively expensive, and must be avoided. This is one reason why any proposed new additions will have to be separated from the existing building structure by an expansion joint. Any new structure could then be as large as desired and still be in accordance with the latest codes. We would recommend that any new addition be framed in structural steel with composite steel and metal deck floors and steel roof deck for a roof. Based on the information that we were able to glean from the existing drawings, it appears that any new foundations would be spread footings.

If you have any further questions, or if we can be of any further assistance, please do not hesitate to call.

Very truly yours,
LeMessurier Consultants



Reginald Roome II, P.E.
Vice President

RR :pw

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FIELD OBSERVATION REPORT

FI#8443
J#

DATE: June 5, 2000
PROJECT: Belmont Library
CLIENT: Tappe Associates, Inc.
DATE OF
OBSERVATION:
OBSERVED BY: Manuel B. Garcia, P.E.

CONTACT:

DISTRIBUTION:

The following comments are intended to identify items of work which were noted by our personnel as not meeting the intent of the documents. There may be additional items which also do not meet the documents and their lack of notations should not be construed as approval of the installation. Contractor is to review all documents and comply with all requirements, whether or not listed below.

1. In the balcony area of the building, in the eaves we have located some duct work for the air conditioning. Essentially, this is a wood framed attic. There is a non-functioning supply and exhaust system to ventilate the attic from either end. The insulation is on the bottom quarter of the trusses. There is a platform in the trusses. There is over a foot between the bottom of the trusses and the suspended ceiling.
2. There is a series of air conditioning units in the eaves. There is actually two in the south end of the building, these are York units. They are Model EB92-B, serial number is BO146117, R22 refrigerant. These units appear to supply air conditioning down into the lower level and the returns are up in the balcony level. There is also some make up air which appears to be taken into the return air plenum out of the ventilated attic space. There is one unit for supply and return for the downstairs and another unit for supply and return for the balcony.

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- Particularly in the winter months this building is very poorly controlled and it's really _____.
2. The air conditioning system is duplicated on the north side of the eaves.
3. The roof is a flat roof with two roof drains up here that basically because of sag and _____ the roof drains are not properly draining. There is a total of 5 condensers up here on the roof. One York unit was replaced last year, the model number _____. The other condensers, one of them being a horizontal is for A/C 6, this is a model C60-26A, this is a York as well, serial number BO-102098. These things look pretty well shot, they seem to be original, one of them has already been replaced a year ago. Another one has been replaced in the last _____ Another is about 7 or 8 years old and three of the five appear to be from the 1970's.
- There is a total of 5 exhaust fans up on the roof here as well. Everything has been serviced by the L. C. Anderson, Inc. company, 617 227-6000.
4. _____ slop sink _____ three floors, drinking fountain is a semi-recessed mounted china. It's surface mounted, recessed china drinking fountain.
5. On the first floor there is a wall hung, elongated, flush valve water closet. Greenwich lavatory with a two handle, center set faucet, no meeting non-accessible and the women's toilet is exactly the same. There is a similar toilet room in the head librarians office.
6. The elevator is a hydraulic elevator, machine room is equipped with ventilation. There is actually a total of 4 janitor's closets.

FI#8443

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Page 3

7. In the lower level there is an air handler which is strictly for moving air around, it is not for cooling, it's circulating air.
8. The foundation for this building consists of what appears to be two grade beams lengthwise through the building with concrete _____. It is unventilated, it's damp and has caused extreme corrosion, what appears to be extreme corrosion, on the cast iron pipe and the hangers and reportedly there has been a few leaks.
9. In the basement area there is a men's room with a toilet, a urinal and a lav. Again, it's wall hung, flush valve toilet, non-accessible.
10. The air handling unit #1 is air conditioning for the assembly room with a fixed air condenser. This unit is a York EBV92-6B, serial number is DX181175. This unit is strictly for the assembly room, what it's basically doing is supplying and returning from the same end of the room. The assembly room has two univents which provide heat and there is also some baseboard radiation in between.
11. In the staff area we have two more toilets with just a wall hung water closet and a lavatory, everything is very well maintained.
12. In the lower level there is one unisex accessible toilet with floor mounted, flush tank toilet, this used to be an old shower room.
13. We have a couple of _____ back here. One includes the cooling tower, _____ cooling tower, another one contains the DX coil for the Media Room. There is exterior gutters and downspouts, the drains are in poor shape here and they continually clog.

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Belmont Memorial Library
Belmont, MA
Existing Conditions Survey
L# 8895/101 058 00/Page 1
October 2, 2000

EXISTING CONDITIONS

• BELMONT MEMORIAL LIBRARY •

GENERAL:

- The HVAC equipment appears to have been installed in two general stages. The original equipment including the boiler and chiller were installed in the mid sixties generally conforming to the 1964 drawings.
- Additional air conditioning systems were installed in the early seventies generally conforming to the 1972 drawings.

HEATING:

- Heating source is natural gas. Fuel oil tanks have been removed and the dual firing burners are operating strictly on gas.
- Boiler is a 2.3 million BTU unit, Weil McLain sectional cast iron boiler with an induced draft fan.
- Generally the building is heated with fire tube radiation, convectors, and heating coils in areas which contain classroom unit vents.
- The Building is reportedly not able to be properly controlled during the heating season.
- As part of the original construction air-conditioning was provided for portions of the Building. Included were pipe fan coils and a central heating and air-conditioning unit. Essentially the work and administrative areas were fed with air-conditioning.
- The system includes a fifteen (15) ton chiller and a cooling tower which is located in an exterior areaway.
- In the early seventies, air-conditioning was added to the remainder of the building.

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Belmont Memorial Library
Belmont, MA
Existing Conditions Survey
L# 8895/101 058 00/Page 2
October 2, 2000

- Basement area assembly room is cooled with a York Air Handler with a condenser mounted in the areaway.
- There is a series of five (5) air handlers located in the attic area. Three (3) of these units supply air to the lower level and two (2) units supply air to the balcony area.
- There is a series of five (5) air-cooled condensers located on the roof. One (1) unit has been recently replaced. Remaining four (4) units are in poor condition.
- The building is not mechanically ventilated. The seventy-two (72) air handlers did not include outside air connectors. The 1964 system included minimal outside air to the air-conditioning unit.
- The attic ventilation system which consisted of pre-set thermostats in the attic has been unoperable for years.
- The existing hydro pneumatic control system is in need of replacement.

RECOMMENDATIONS:

- The heating and cooling systems have far exceeded their life expectancy and should be replaced.
- The building generally lacks mechanical ventilation. While code can be met with sufficient operable windows, current practice dictates the use of mechanical ventilation systems to provide a proper indoor air quality. The light floor to floor heights severely limit the ability to provide proper ventilation as ductwork distribution is severely hampered.
- The crawl space needs to be improved if proper indoor air quality is to be maintained.

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Belmont, MA
Existing Conditions Survey
L# 8894/101 058 00/Page 1
October 2, 2000

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On June 1, 2000 our staff visited the Belmont Library to visually assess the Mechanical Systems. The following is our report:

EXISTING CONDITIONS

• BELMONT MEMORIAL LIBRARY •

PLUMBING

- Presently, the plumbing systems serving the building are cold water, hot water, sanitary waste, and vent system, storm drain piping, and natural gas.
- The Library is serviced by Town Sewer and Town Water. Storm drainage from flat roof areas is disposed of by a system of roof drains, & rain water conductors which discharge to a piped storm drainage system which discharges to a municipal storm drain.

FIXTURES:

- Fixtures in the building appear to be original to the 1965 era construction. Water closets are wall hung, flush valve vitreous china, with elongated bowls.
- Urinals are wall hung, flush valve, vitreous china some are extended shield and others are straddle type urinals.
- Lavatories are generally wall hung vitreous china, two handle center set faucets.
- Drinking fountains are vitreous china wall hung non-refrigerated, recessed and semi-recessed.
- Janitor's sink are wall hung, cast iron sinks supported on enameled iron trap standard. Faucets generally lack vacuum breakers.
- There is a unisex, accessible toilet facility retrofitted at the ground level.

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Belmont, MA
Existing Conditions Survey
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October 2, 2000

DRAINAGE SYSTEMS:

- Cast iron is used for sanitary and storm drainage. The exposed piping runs in the crawl space which is formed by a series of grade beams and the lower level concrete ribbed slab. The floor of this space is exposed first and due to the moisture problems, the piping and hangers exhibit a significant amount of corrosion.
- The flat roof is formed by wood trusses which have apparently sagged. There are significant ponding areas on the roof and these areas flood before the water drains into the roof drains. The two roof drains on the main roof are therefore not properly draining.
- There is an area way on the street side of the library which houses some mechanical equipment. Reportedly this area has flooded in the past. It appears from old documents that this area drains to an old foundation drain which we surmise may be partially clogged over time.

WATER SYSTEMS:

- Domestic water piping is copper, insulated. Insulation on valves and fittings are cementitious and need to be evaluated for asbestos.
- The water service is a 2" service with 1 1/2" disc meter and a separate meter for garden club.
- Water pressure was read at 90 psi.
- Domestic water heating is provided with an original 65 gallon all-copper, natural gas fired hot water heater storage tank combination. The unit locks roper thermostatic controls.
- Hot water is piped from this location to the additions.
- Hot water is generated in winter with submersible coils fed from the boilers within the tanks. The tanks appear to have exceeded their useful life.
- System does not have adequate temperature control. An upgrade is indicated.

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Belmont, MA
Existing Conditions Survey
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October 2, 2000

NATURAL GAS:

- There is a natural gas service.
- Gas feeds the boiler, water heater and all emergency generator.
- The gas piping appears suitable for reuse depending of course on size considerations of new load.

PLUMBING RECOMMENDATIONS:

- The plumbing systems are well maintained, however the fixtures and layouts do not meet current standards for accessibility water and energy conservation, and backflow prevention.
- Regardless of the expansion program the plumbing system requires the addition of a pressure regulator, and thermostatic controls on the water heater.
- In terms of the water conservation fixtures, their use is governed by the provisions of the Plumbing and Building Code. Essentially, the code does not require these fixtures to be upgraded, but, where new fixtures are installed, as may be required by other codes or concerns, then the new fixtures need to be water conserving types of fixtures.
- The question of accessibility is somewhat more complex. The impact on the Plumbing is fairly simple but can be rather expensive.
- The Mass. Architectural Access Board Regulations are found at 521CMR and as relates to Plumbing would, in our interpretation, provide as follows:
- The level of Plumbing Compliance is determined by the value of total work being performed.
- If the total work is less than \$100,000.00 and if this work were to include any Plumbing, then the Plumbing Work would need to comply.

Belmont Memorial Library
Belmont, MA
Existing Conditions Survey
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October 2, 2000

- If the total work is over \$100,000.00 and less than 30% of the full and fair cash value of the building, then an accessible toilet and drinking fountain must be part of the work.
- If the cost of the work exceeds 30%, then all of the existing and new Plumbing Facilities need to be accessible.
- MAAB takes this to mean that at every location where there are toilet rooms, the toilet rooms need to be made to comply with MAAB. This can be accomplished by providing accessible facilities in each toilet or unisex accessible reasonably close to the core toilets. Unisex toilets usually are not programmatically acceptable in a public school, and therefore every toilet room needs to be reconstructed to conform to current MAAB dimensional standards.
- The water piping could be reused in a major renovation.
- The drainage systems in the crawl space would need total replacements and the crawl space should be fixed to include a vapor barrier, new slab, and ventilation in order to prevent further deterioration of piping.

FIRE PROTECTION RECOMMENDATIONS:

- The library does not have a Fire Protection System.
- Currently, sprinklers are required by State Statutes under MGL Chapter 148, Section 26G, only in additions of 7,500 s.f. and only where a public water supply is present.
- Under Article 9 of the new Sixth Edition of Mass Building Code, all library uses of 12,000 s.f. or greater are required to be sprinklered whether or not there exists municipal Water. Article 34 cross referenced back to Article 9 requires under 3404.12 that Fire Protection Systems are required in "substantially renovated" buildings. Under Article 9 it appears that the determination would be made by the Building Inspector as to the term "substantial renovation".
- In essence, any addition of 7,500 s.f. will need sprinklering and an extensive renovation will require complete sprinkler systems throughout.

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Belmont Memorial Library
Belmont, MA
Existing Conditions Survey
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- For the use, a standpipe system conforming to NFPA 14 will also be required.
- The building will require in the upper levels several levels of sprinkler heads and in all likelihood will also require a dry system.
- The wooden truss system framing the attic creates one level of combustible construction in the attic, as well as a concealed space above the ceiling.

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Belmont Memorial Library
Belmont, MA
Existing Conditions Report
J#101058.00
L#9352/Page 1/February 13, 2001

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FEB 15 2001

TAPPEARS QUINCY, INC

EXISTING CONDITIONS

• BELMONT MEMORIAL LIBRARY •

ELECTRICAL

ELECTRICAL DISTRIBUTION SYSTEM:

The existing electrical service consists of a main switch rated at 600amp, 120/208 volt, 3Ø, 4wire. The fuse size could not be determined without disassembling the main switch enclosure. For the purpose of this study the trip rating of the main switch is not critical. The equipment is located in a custodian work room space adjacent to the boiler. The equipment is in fair condition. In fact the equipment has been well maintained and physical appearance is excellent.

Existing lighting and power panels are circuit breaker type and are rated at 120/208 volt, 3Ø, 4wire. The existing panels do not appear to have spare circuit breakers for the addition of new lighting and power circuits. The panels and service equipment are manufactured by Cutler Hammer.

The service equipment and remote panels are original 1965 construction.

INTERIOR LIGHTING SYSTEM:

Existing stack lighting consists of acrylic lens fixtures perpendicular with the stacks. The fixtures are in fair/poor condition. Corridors are equipped with wrap around fluorescent fixtures.

The Library personnel reported that several ballast failures have occurred. The main lobby space has globe type incandescent fixtures. Office areas are equipped with wraparound fluorescent fixtures.

The interior lighting system appears to be original 1965 construction with few modifications.

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EMERGENCY LIGHTING SYSTEM:

The existing emergency lighting system is through a natural gas generator rated at 4KW, 120/240v, 1Ø, 3W and is manufactured by Onan. An automatic transfer switch manufactured by Onan is present. The system is not code compliant and the equipment is in poor condition.

SITE LIGHTING SYSTEM:

Existing site lighting is by building mounted flood light fixtures. Walkway lighting is by Cooley-Hat fixtures mounted on poles.

WIRING DEVICES:

Generally offices have one receptacle, per interior wall. Additional outlets should be provided to serve computer equipment. Several extension cords are being used to serve computers.

The distribution system is original and was not designed for computer loads. Generally, 200% neutral feeders to panels are used. In addition, neutral conductors should not be shared.

FIRE ALARM SYSTEM: *

The building is equipped throughout with an automatic fire alarm system. Existing strobes do meet ADA. Notification to the fire department is by a flush master box.

The spacing of smoke detectors does not meet code.

Toilets do have ADA Strobes but do not have automatic detection.

Strobe lights, in some cases, are mounted higher than 80" above floor as is required by ADA.

The fire alarm control panel is manufactured by Silent Knight. The panel does both intrusion alarm and security.

** needs to be periodically tested.*

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DATA/TELEPHONE//CLOCK SYSTEM/SECURITY SYSTEM:

System clocks are manufactured by Simplex. The clocks appear to be fully functional.

A computer network is installed. The library is connected to Minuteman Library Network (MLN).

The library is also a central hub for a wide area network. The equipment is located in Tech Services.

Recommendations

ELECTRICAL DISTRIBUTION SYSTEM:

The continuous capacity of the existing service (80% of service rating) is 600amperes or 172.8KW. The total square footage is approximately 23,000 s.f. yielding approximately 7.5 watts/s.f. for lighting and power.

New construction service ratings are generally designed for a demand load of 15 watts/s.f. The service capacity may not be adequate for the addition of future computers. It is recommended that a new 1200 amp, 120/208 volt, 3Ø, 4wire service be installed to serve the library. New lighting and power panels will be required to accommodate added loads.

The existing distribution system should be replaced to accommodate computer loads and full air conditioning.

INTERIOR LIGHTING SYSTEM:

New lighting fixtures should be installed with low glare type fixtures such as Parabolic 1'x4' with low iridescent louvers in the stacks. Office areas should have 2' x 2' parabolic fixtures installed. Common spaces/lobby should have pendant fixtures and downlights with fluorescent lamps for energy savings and long life.

Review one of the parabolic

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EMERGENCY LIGHTING SYSTEM:

A new emergency generator and light fixtures should be installed to serve all egress areas such as corridors, intervening spaces, toilets, and above exterior doors.

The generator should be sized to include heating system and communications system.

WIRING DEVICES:

The office will require a minimum of (1) duplex receptacles per wall and (1) double duplex receptacles at each computer workstations.

FIRE ALARM SYSTEM:

The Control panel should be replaced with an addressable type. The control panel power supply should be sized to accommodate ADA strobes in toilets and horn/strobes in corridors and public spaces.

DATA/TELEPHONE/CLOCK SYSTEM:

The existing data system is modular in construction and can be re-used. The existing telephone system appears to be Centrex service. The telephone system may be upgraded to a key switch. The existing clock system should be replaced due to its life expectancy.

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UNIVERSAL ENGINEERING

SUBSIDIARY OF GUERTIN & ASSOCIATES, INC.

91 Montvale Avenue Stoneham, Massachusetts 02180 Tel: (781) 279-2288 Fax: (781) 279-7993 with offices in Lincoln, RI

February 12, 2001

RECEIVED

FEB 13 2001

Mr. Drayton Fair
A. Anthony Tappe' & Associates
6 Edgerly Place
Boston, MA 02116

TAPPE ASSOCIATES, INC

Reference: Belmont Library

Dear Mr. Fair:

Thank you for providing Universal Engineering the opportunity to serve your environmental needs.

Below is a summary of cost estimates for asbestos abatement at the Belmont Library. The estimates were based on visual inspection of the building conducted on October 1, 2000. No bulk samples were collected from any materials suspected to contain asbestos.

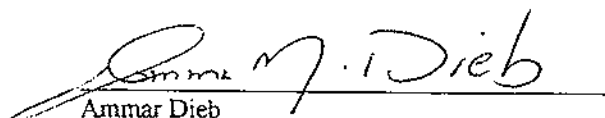
A complete comprehensive inspection is required prior to any renovation and demolition project.

Lower Level	Pipe and Hard Joint Insulation	\$	800.00
	Vinyl Floor Tile	\$	22,000.00
	Flexible Connector	\$	200.00
First Floor	Vinyl Floor Tile	\$	25,000.00
Mezzanine	Vinyl Floor Tile	\$	8,000.00
Various Locations	Hidden and Miscellaneous Asbestos	\$	5,000.00
Exterior	Windows (Asbestos Caulking)	\$	8,000.00
	Engineering Fees	\$	11,000.00
	Total:	\$	80,000.00

Please do not hesitate to contact me at (617) 542-8216 if you have any questions.

Very truly yours,

UNIVERSAL ENGINEERING CORPORATION


Ammar Dieb
Vice President

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