UNIVERSITY OF Minnesota

MEDICAL SCHOOL • DEPARTMENT OF MEDICINE
DIVISION OF DERMATOLOGY • MINNEAPOLIS, MINNESOTA 55455

May 22, 1968

Dr. Elmer Learn
Assistant to President
202 Morrill Hall
University of Minnesota

Dear Doctor Learn:

As you know, I am keenly interested in creating an Instructional Resources Center in the new Health Sciences complex. This center is indeed the most important aspect of the new construction. Because of its importance and because it will have unique growth requirements not characteristic of the rest of the college facility, one of the major concern for the IRC, both now and in the future, will be space. This space need can never be met by the aboveground area remaining for Health Sciences' expansion, but it can be accomplished by building the IRC underground in the rock structure under the University.

I have discussed this with Dr. Cheston (Dean of College of Engineering) and Dr. Yardley (Associate Professor in Mining and Engineering) who is an international expert in mining and underground construction. Both agree this expansion is economically feasible; and in terms of the long-range plans and space needs, it maybe the most economical form of construction for the IRC.

I have enclosed my thoughts on the reasons for the IRC and the advantages for underground construction. I have yet to encounter a single major objection, and the many advantages are encouraging. I realize the letter and my thoughts are long, but the educational needs of the Health Sciences are paramount. If the University will consider my proposal, I would like to speak to the architects from TAC.

Sincerely yours,

Ramon M. Fusaro

Ramon M. Fusaro, M.D., Ph.D.
Associate Professor

RMF:lw

Enc.

5. The underground IRC will solve one of the major problems of the present Health Science facility; that is, the student activity area will set the student traffic away from the Hospital and OPD clinics. With an enrollment of over 4,000 or more the problem will be greater. The only time students should be in the Hospital or OPD clinics is when they are involved with the patients in a learning situation. In addition we will need locker room area and eating facilities for the students. Below ground we have all the space we need. Eating areas could be large study halls when they are not in use.

6. The auto congenstion will be less as the service delivery for the Health Sciences Complex would be via tunnel from the river flats.

7. The IRC will necessitate many peripheral CRT taps from the existing structures into the IRC. This means co-axial cable to all existing buildings. The best method for placing these cables without destroying their electrical properties is by vertical drop; that is, the cables are dropped straight down from the above ground buildings into horizontal cables far below in the rock formation. With the IRC being below ground the vertical drops present no problem.

8. The city of Minneapolis will benefit from the preservation of aboveground tax paying structures. In addition, since there will be no condemning of homes or business, public complaint will be minimal.

UNIVERSITY OF Minnesota

MEDICAL SCHOOL • DEPARTMENT OF MEDICINE
DIVISION OF DERMATOLOGY • MINNEAPOLIS, MINNESOTA 55455

June 1, 1968

Dr. Elmer W. Learn
Assistant to the President
Office of the President
202 Morrill Hall

Dear Doctor Learn:

Enclosed is a report of the subcommittee on the Instructional Resources Center. This report was sent to Doctor Holland, but he informed me that since his committee is no longer meeting, this report should go directly to you.

The data submitted are a gross estimation of the space needs of the Instructional Resources Center. Included are also the print needs of the Bio-Medical Library, as the library is part of the IRC and shares many overlapping functions.

Since the committee has been in existence for less than two months, this report is only a preliminary report. We are still carrying on an analysis of the faculty needs in the five schools and University hospitals in the Health Science Center. The School of Dentistry is the only college in which an in-depth analysis was accomplished, as they started their study almost 1½ years ago. The needs of the other schools, particularly the College of Medicine, are still being analyzed.

Our committee would like to continue its work since we believe the recommendations we are now submitting are only preliminary and the architects will need more precise data in the coming months. We request permission to establish our committee on a somewhat firmer, permanent basis so that each of the schools and the technological disciples involved in the IRC may have continuing dialogue in order to gather data on IRC needs. The committee feels an urgent need to continue its work so that the faculty will be alert to the potential of such a Center for improving and personalizing instruction. As a first step in this direction, we hope to establish a bulletin to keep faculty continually informed on developments in these areas.

Sincerely yours,

Ramon M. Fusaro

Ramon M. Fusaro, M.D., Ph.D.
Chairman of the Subcommittee of IRC

INSTRUCTIONAL RESOURCES CENTER NEEDS - 1973

I. Non-Print or Audio-Visual

	Sq. Ft.
A. Carrels (400 -- 10:1 student ratio)	
1. 400 x 25 sq. feet (200 carrels 100% wet)	10,000
2. Supervisory and approach area	200
3. Central tape audio and video playback	800
4. Storage of equipment and materials (including Library)	1,000
	12,000
B. Central Equipment Pool and Materials storage area	
1. Small recording studio	200
2. Preview rooms	300
3. Equipment storage and first line maintenance	600
4. Staff materials adviser, booker, technician	400
	1,500
C. Audio-Visual library	3,000
D. Health Science Arts and Photography Production	
1. Still Production, Motion-picture Production and Studio	3,000
2. Arts Production	1,000
3. Dark Room space	1,000
	5,000
E. Service Training Area and 1st live Production	1,000
F. Television Production	
1. Production studios (2) and immediate support area	3,000
2. Master TV control (15 units simultaneous)	3,000
3. Support workshops and Supplies	1,500
	7,500
G. Computer-Aided Instruction and Production	1,500
H. Professional Technical Offices, Consultation and Meeting Rooms	
1. Television	2,000
2. Library (AV)	500
3. Health Science Art and Photography	1,800
4. Computers	700
	5,000
SUBTOTAL (1973 needs)	36,500

II. Print Library Expansion Needs (additional space)

	1973	1986	Subtotal
A. Reading Rooms	7,300	9,600	16,900
B. Book stack	8,200	9,000	17,200
C. Staff areas	1,700	1,400	3,100
Subtotal.	17,200	20,000	

TOTAL LIBRARY NEEDS 37,200

III. Total needs for IRC

	1973	1986
A. (I) Non-Print (A/V)	36,500	??*
B. (II) Print (Bio-Med Library)	17,200	20,000
TOTAL	53,700	73,700**

* Can't estimate at present because of rapid change in technology and changes in Educational use of these technological tools.

** This figure includes the following:

IRC Non-Print area	36,500
Bio-Med Library (Print) area	37,200
Total	73,700 sq. ft.

June 14, 1968

Dr. Elmer W. Learn
Assistant to the President
President's Office
202 Morrill Hall

Dear Doctor Learn:

I would like to submit a supplimentary note on the Instructional Resource Center report.

One of the important aspects of the Instructional Resource Center is a duplicating service where the faculty can get instructional material reproduced rapidly and inexpensively. We have just recently made an evaluation of these needs and have consulted Mr. Lester Metz. He agrees that an area of 2,000 square feet is needed for such a service. The Instructional Resource Center would therefore need 38,500 square feet of space instead of the 36,500 square feet that we had originally estimated on our report. Would you please make this correction on the report? I would appreciate it very much.

Sincerely yours,

Ramon M. Fusaro

Ramon M. Fusaro, M.D., Ph.D.
Chairman, IRC Subcommittee

RMF:lw

CC: Mr. Hugh Peacock
IRC Subcommittee members

UNIVERSITY OF *Minnesota*

OFFICE OF THE VICE PRESIDENT FOR ADMINISTRATION
MORRILL HALL · MINNEAPOLIS, MINNESOTA 55455

September 10, 1969

TO:
Dr. Ramon Fusaro, Chairman
Dr. John Geier
Mr. Gary Peterson
Dr. Barbara Redman
Dr. Edward Rippie
Mr. Robert Schwanke

Mr. Glen Brudvig, Ex officio
Mr. LeRoy Christenson, Ex officio
Mr. Martin Finch, Ex officio
Mr. Wesley Grabow, Ex officio

FROM: Donald K. Smith, Vice-President for Administration and Chairman, Design Coordinating Committee

SUBJECT: Learning Resource Center Planning Committee

At the last meeting of the Design Coordinating Committee a decision was made to reactivate planning for a Learning Resource Center. I would like for the above individuals to constitute a committee to define as precisely as possible the needs for this type of facility, develop a projected program of utilization and work with the architects in planning spacial arrangements. It is hoped that each person representing an educational unit will closely correlate the committee's activities with that of the various educational policy committees.

The individuals listed in the left hand column above have been designated by their respective deans and directors as their representative on this committee. Those persons listed on the right are being asked to serve as non-voting resource specialists to the committee. Your willingness to serve will be appreciated.

Recommendations of the committee should be discussed with the Health Sciences Council of Deans and Directors and reports submitted to Mr. Thomas Smith, Health Science Planning Coordinator.

DKS/mc

Donald K Smith

file

UNIVERSITY OF *Minnesota*

UNIVERSITY HOSPITALS · MINNEAPOLIS, MINNESOTA 55455

September 30, 1969

TO: Dr. Ramon Fusaro

FROM: C. Thomas Smith, Jr.

SUBJECT: Learning Resource Center

As we discussed on the telephone The Architects Collaborative has asked for an interim report from your committee dealing with the impact of the Learning Resource Center on Unit A. This report is needed by October 15, 1969, in order for TAC to proceed on developing working drawings for Unit A. In dealing with this issue the committee should consider the learning resource elements already programmed for Unit A and whether or not these elements should be arranged in any different way.

Attached is a list of classrooms in all units including Unit A for your information. Also, you should be aware that the following basic science teaching laboratories are to be provided in Building A:

Second Floor	Third Floor
Bio-Chemistry	Physiology
3 laboratories - 40 students ea.	6 laboratories - 25 students ea.
1 laboratory - 30 students	Pharmacology
Micro-Biology	6 laboratories - 25 students ea.
3 laboratories - 50 students ea.	Pathology
	5 laboratories - 30 students ea.

In addition, the Anatomy Department will maintain its existing laboratories with an expansion which will enable it to accommodate approximately 375 students. Dentistry has also programmed into Building A 2620 net square feet for photography and television purposes. The committee should closely review the proposed use of this space and other space with a learning resource element in relation to the proposed center.

You asked that I jot down my thoughts as to what specifically your committee is being asked to do. It seems to me that this committee should develop a program for a learning resource function that reflects the curricula of the various health science units. Such a program should define in rather precise terms the specific types of learning resources that should be integrated in development of a health sciences facility. The only given at the present time is 33,000 square feet in which to develop this program. How that program is developed depends upon what this

committee perceives to be the needs for this kind of activity. Therefore, the first step is to develop a program statement of what the needs are, how those needs can be met programmatically and then translate these program needs into spacial terms. At that point then it will be necessary to decide whether the center shall exist as a single unit or as several units spread throughout the health sciences center.

As we discussed, TAC has also asked that the committee's final report be prepared by November 15, 1969. I fully appreciate the difficulties this imposes on the committee, particularly in regard to the fact that a new curriculum has just now been implemented in the Medical School. It is also short notice considering the fact that your committee has only been appointed within the last few weeks. However, I would ask that you get the committee working as soon as possible and try by November 15 to have a preliminary report so that TAC can have your initial thoughts and begin to assess the implications of these thoughts on the total development program. Your cooperation in doing this will be appreciated.

cc: Mr. Robert Turner, TAC.

H.S. Exp. Standards and Closed classr

UNIVERSITY OF MINNESOTA HEALTH SCIENCES EXPANSION
PHASE I SCHEMATIC CLASSROOM PROPOSAL June, 1969

TOTAL CLASSROOM REQUIREMENT, PHASE I

Seating Capacity	Construction Step	Location	Area New	Area Existing
350	1	Unit 'A'	5,357	
350	2	Unit 'C'	5,455	
250	1	Unit 'A'	3,581	
250	1	Unit 'A'	3,581	
200	1	Unit 'A'	2,924	
200	3	15 Owre		2,536
150	2	Unit 'F'	2,250	
150	2	Unit 'F'	2,250	
150	3	Jackson 74		1,386
100	1	Unit 'A'	1,356	
100	3	Owre 12		1,237
75	3	Mayo 100		1,377
50	1	Unit 'A'	726	
50	1	Unit 'A'	726	
50	1	Unit 'A'	726	
50	3	Mayo 125		750
50	3	CHRC 208		660
30	3	Powell 2309		454
30	3	Powell 2317		441
30	3	CHRC 204		393
30	3	Owre 117		608
30	3	Millard 213		918
		TOTAL AREA	28,932	10,760

LEARNING RESOURCES CENTER PLANNING COMMITTEE

Minutes of Meeting

16 October 1969

Present: Ramon Fusaro, Chairman, Glenn Brudvig, LeRoy Christenson, Martin Finch, John Geier, Wesley Grabow, Mellor Holland, Gary Peterson, Barbara Reedman, Robert Schwanke.

In order to complete design development drawings for Unit A by April 1, 1970, The Architects Collaborative have to have all information in hand to determine structural mechanical grid for Unit A by January 1. Consequently, TAC must have all program information for Unit A by December 1, including input from the Committee on the implications of Unit L for Unit A.

DEFINITION OF LEARNING RESOURCES CENTER

Dr. Fusaro received a letter 15 October 1969 from the Health Sciences Planning Coordinator indicating that 33,000 square feet are included in Phase I of the development program for learning resources and requesting definition of the relationship of learning resources space to Unit A. The Learning Resources Center Planning Committee report submitted to the Design Coordinating Committee last year requested 38,500 square feet for Learning Resources facilities including neither space for expansion of the Bio-Medical Library nor space for peripheral carrels. The report defined minimum space requirements for centralized audio visual learning facility and for production areas. Since production facilities are essential in providing material for carrels, production spaces cannot absorb the 5,500 square foot reduction and it will have to be taken from the 10,000 square feet allocated in the program for centralized carrels.

The Committee visualizes half of the space designated for Unit L as production facilities and half as a self-instructional area with wet and dry carrels adjacent to or continuous with the Bio-Medical Library. Although proximity to both Diehl and the area of heavy student concentration at the north end of the Health Sciences site would be ideal, the physical tie to Diehl is essential. It permits a single card cataloging system, avoids a duplication of staffing which is an extremely important factor since the library is open 98 hours a week, and allows print and non-print materials to be used interchangeably. Spaces to be consolidated in the vicinity of Diehl include space program items A, B, C, G, and portions of I to be designated by Mr. Grabow. While the Committee hopes some retrieval carrels will be provided in teaching areas, priority for the 33,000 square feet allocated for Learning Resources is for a consolidated center. The audio-visual library will provide a central pool of information that can be transferred to decentralized facilities at some future time. Eventually retrieval carrels will be located throughout the Twin Cities.

CATEGORY I

Offices for one resource person from Medical Art and Photography, television, computer programming, and space for conferences should be provided within

the learning center. The remaining office space under Category I will be distributed throughout production facilities. Mr. Finch requested that the space allocated for additional office facilities for Medical Art and Photography be reduced to 1,000 square feet and the difference added to production space. Mr. Grabow and Dr. Fusaro will analyze the redistribution of Category I space and have the revised figures by Thursday, 23 October 1969.

RELATION TO UNIT A

The learning center itself is likely to have significant implications for the design of Unit C rather than Unit A. However, in order to be able to transmit and receive in Unit A when it is ready for use September 1973, a temporary control center combining some space from Categories F1 and F2 must be established. This need not be physically located within Unit A. Space requirements for the temporary control center will be detailed by Mr. Grabow. The control center will serve only as an interim measure and will be phased out as soon as centralized production facilities become available with completion of Unit L. Mr. Grabow assured the Committee that adequate storage areas for portable equipment are already programmed into Unit A classroom areas.

PRODUCTION SPACE

Items D, E, F, H and portions of I constitute the production facilities for the learning center. This area must not be fragmented but it can be located wherever it will fit and need not relate directly to the learning center component of Learning Resources space. It could be located in basement space if adequate vertical access is provided for transportation of large equipment.

CHARGE TO TAC

The Committee requested that the architects explore the possibility of utilizing the current non-library areas of Diehl for the learning center portion of Unit L. Part of one floor of Diehl is currently being remodeled for experimental learning facilities. Since the physical tie to the existing library is essential for the learning center, the Committee urges that space within Diehl currently utilized for non-library functions be converted into the Learning Resources Center.

M. Smith file

LEARNING RESOURCES CENTER PLANNING COMMITTEE

Minutes of Meeting

16 October 1969

Present: Ramon Fusaro, Chairman, Glenn Brudvig, LeRoy Christenson, Martin Finch, John Geier, Wesley Grabow, Mellor Holland, Gary Peterson, Barbara Reedman, Robert Schwanke.

In order to complete design development drawings for Unit A by April 1, 1970, The Architects Collaborative have to have all information in hand to determine structural mechanical grid for Unit A by January 1. Consequently, TAC must have all program information for Unit A by December 1, including input from the Committee on the implications of Unit L for Unit A.

DEFINITION OF LEARNING RESOURCES CENTER

Dr. Fusaro received a letter 15 October 1969 from the Health Sciences Planning Coordinator indicating that 33,000 square feet are included in Phase I of the development program for learning resources and requesting definition of the relationship of learning resources space to Unit A. The Learning Resources Center Planning Committee report submitted to the Design Coordinating Committee last year requested 38,500 square feet for Learning Resources facilities including neither space for expansion of the Bio-Medical Library nor space for peripheral carrels. The report defined minimum space requirements for centralized audio visual learning facility and for production areas. Since production facilities are essential in providing material for carrels, production spaces cannot absorb the 5,500 square foot reduction and it will have to be taken from the 10,000 square feet allocated in the program for centralized carrels.

The Committee visualizes half of the space designated for Unit L as production facilities and half as a self-instructional area with wet and dry carrels adjacent to or continuous with the Bio-Medical Library. Although proximity to both Diehl and the area of heavy student concentration at the north end of the Health Sciences site would be ideal, the physical tie to Diehl is essential. It permits a single card cataloging system, avoids a duplication of staffing which is an extremely important factor since the library is open 98 hours a week, and allows print and non-print materials to be used interchangeably. Spaces to be consolidated in the vicinity of Diehl include space program items A, B, C, G, and portions of I to be designated by Mr. Grabow. While the Committee hopes some retrieval carrels will be provided in teaching areas, priority for the 33,000 square feet allocated for Learning Resources is for a consolidated center. The audio-visual library will provide a central pool of information that can be transferred to decentralized facilities at some future time. Eventually retrieval carrels will be located throughout the Twin Cities.

CATEGORY I

Offices for one resource person from Medical Art and Photography, television, computer programming, and space for conferences should be provided within

the learning center. The remaining office space under Category I will be distributed throughout production facilities. Mr. Finch requested that the space allocated for additional office facilities for Medical Art and Photography be reduced to 1,000 square feet and the difference added to production space. Mr. Grabow and Dr. Fusaro will analyze the redistribution of Category I space and have the revised figures by Thursday, 23 October 1969.

RELATION TO UNIT A

The learning center itself is likely to have significant implications for the design of Unit C rather than Unit A. However, in order to be able to transmit and receive in Unit A when it is ready for use September 1973, a temporary control center combining some space from Categories F1 and F2 must be established. This need not be physically located within Unit A. Space requirements for the temporary control center will be detailed by Mr. Grabow. The control center will serve only as an interim measure and will be phased out as soon as centralized production facilities become available with completion of Unit L. Mr. Grabow assured the Committee that adequate storage areas for portable equipment are already programmed into Unit A classroom areas.

PRODUCTION SPACE

Items D, E, F, H and portions of I constitute the production facilities for the learning center. This area must not be fragmented but it can be located wherever it will fit and need not relate directly to the learning center component of Learning Resources space. It could be located in basement space if adequate vertical access is provided for transportation of large equipment.

CHARGE TO TAC

The Committee requested that the architects explore the possibility of utilizing the current non-library areas of Diehl for the learning center portion of Unit L. Part of one floor of Diehl is currently being remodeled for experimental learning facilities. Since the physical tie to the existing library is essential for the learning center, the Committee urges that space within Diehl currently utilized for non-library functions be converted into the Learning Resources Center.

UNIVERSITY OF Minnesota

DIVISION OF DERMATOLOGY
MAYO MEMORIAL BUILDING • MINNEAPOLIS, MINNESOTA 55455

November 5, 1969

Dr. Donald K. Smith, Vice-President for Administration and
Chairman, Design Coordinating Committee
202 Morrill Hall

Re: Recent developments of the Learning Resources Center Planning Committee with TAC.

Dear Vice-President Smith:

During the last two weeks the Learning Resources Center Planning Committee has met with TAC. We have taken into account the fact that we have 33,000 square feet of space alloted to us in the new Health Sciences construction. The allotment of space will be as follows:

	Sq. ft.
A. Carrels (#200)	4,500
1. Supervisory and approach area	200
2. Central tape audio and video playback	800
3. Storage of equipment and materials	1,000
Sub-total	6,500
B. Central equipment pool and materials storage area	
1. Small recording studio	200
2. Preview rooms	300
3. Equipment storage and first line maintenance	600
4. Staff materials advisory booker and technician	400
Sub-total	1,500
C. Audiovisual library and professional technical offices, consultation and meeting room areas	
1. Audiovisual library	3,000
2. Professional technical offices, consultation and meeting rooms	500
Sub-total	3,500
D. Health Sciences arts and production	
1. Still motion picture production and studio	3,000
2. Arts production	1,000
3. Dark room space	1,000
4. Professional technical offices, consultation and meeting rooms	1,800
Sub-total	6,800

		Sq. ft.
E.	Service training area and first-line production	1,000
F.	Television production	
	1. Production studios (2) and immediate support areas	3,000
	2. Master TV control (15 units simultaneous)	3,000
	3. Support workshops and supplies	1,500
	4. Professional technical offices and consultation and meeting rooms	2,000
	Sub-total	9,500
G.	Computer-aided instruction and production	
	1. Computer-aided instruction and production	1,500
	2. Professional technical offices and consultation and meeting rooms	700
	Sub-total	2,200
H.	Duplication center for type reproduction	2,000
	GRAND TOTAL	33,000

None of the above space will be in the construction of Unit A as the plans for this construction have been approved by the Department of Health, Education and Welfare and are presently being considered for funding by them this December. Any major modification of placing the Learning Center in this area would only result in re-application of that request; therefore, the Learning Center construction will have to be at a date later than Unit A.

TAC has been notified of the necessity of locating certain parts of the Learning Resources Center in the Library area because of their library function. The following units should be intimately attached to the Library: carrels, central equipment pool and storage area, audiovisual library, and computer-aided instruction. These are primarily library function and will involve the retrieval of information and self-instruction by the students. The carrels will be in one unit next to the library and it will be primarily devoted towards self-instruction by the students on a 98-hour basis.

The production area can be located at other sites which have not been determined as yet. They are the Health Sciences Arts and Photography production, service training area and first-line production, television production, duplication center for type reproduction. The Committee pointed out to the TAC that the production studios have to be in such a location as to bring in support materials from the outside, especially television production might require the kinds of props which would necessitate large equipment; therefore, service is important to these areas.

The architects have not made any decision as to where any of the resources areas will be located. However, they are aware of the above needs. They were informed that the Medical School is presently installing a learning center on the third level of Diehl Hall in the former large 24-hour study room. It was pointed out to TAC that it would be advisable to extend the present learning center into the new Health Sciences Learning Center and make it into one unit.

Sincerely,

Ramon M. Fusaro, M.D., Ph.D., Chairman
Learning Resources Center Planning Committee for the Health Sciences

RMF:lw

LEARNING RESOURCE CENTER PLANNING COMMITTEE

MEETING NOTES

PRESENT: Dr. Buckwald, Mr. Christenson, Mr. Finch, Dr. Fusaro, Mr. Grabow, Mr. Peterson, Dr. Redman, Dr. Sarnoff, and Mr. Taylor.

DATE: December 16, 1969

RE: Proposed Locations for Unit L.

The purpose of the meeting was to discuss with the architect, Mr. Ken Taylor, the proposed locations for the production and retrieval areas of the Learning Center. After discussing the four alternatives for the location of the retrieval area, it was decided upon that the second floor of Diehl Hall would be the best area for this. The retrieval area will occupy 13,700 square feet of space. It was proposed that a centralized entry for the library and retrieval area be located on the second floor when this area is completed instead of on the third floor as it is now. This proposal is to be discussed with Glenn Brudvig and Associate Dean Hopper.

Of the proposed areas for production, the area under the Mayo Auditorium, north side of Unit A, was agreed upon as the best site. Production will occupy 19,300 square feet of space. The major advantages of this space was the fact that this location is on the periphery and expansion towards Harvard Street is possible and also the construction of high ceilings in this area is possible. The various sub-station units for production were discussed. They are located in physiology, anatomy, and medical arts and photography. These will remain after the central production unit is completed.

Dr. Henry Buckwald summarized the audio-visual needs of the Department of Surgery in the operating rooms. He requested T.V. monitors for each operating room for recording and transmission to distant sites.

The meeting adjourned at 3:15 p.m.

MEETING ON PRODUCTION UNIT WITH KEN TAYLOR

MEETING NOTES

PRESENT: Mr. Broger, Mr. Christenson, Mr. Finch, Dr. Fusaro, Mr. Metz, Mr. Goldstein, Mr. Johnson, Mr. Juran, and Mr. Taylor.

DATE: January 14, 1970

Re: Proposed locations for the Production Unit.

The location of the Production Unit in Unit A has been rejected by Vice-President Champion. Because of the need for future expansion, Unit F seems to be the most logical location for the Production Unit. Unit F will essentially be an extension of Unit A and will be completed in 1976. Ken Taylor pointed out that this completion date was not out of range because the Retrieval Unit in Diehl Hall will not be completed until the end of 1975.

Ken Taylor suggested that those present at the meeting make a list of their individual needs and requirements in their specific technical areas and bring this information with them to the next meeting. A discussion followed concerning the interrelationships in the various production units. The following is a list of some of these suggestions:

1. The printing area should be away from T.V. and Motion Picture because of the noise.
2. A loading dock and large corridors will be necessary for printing stock.
3. The corridors should be wide enough for the transport of supplies and equipment.
4. T.V. studios should be located next to the Motion Picture studios.
5. Separate air conditioning and humidity control for all the production units, especially T.V. and Motion Picture, will be needed.
6. T.V. and Motion Picture studios should be located away from any radiation sources.

The next meeting is scheduled for February 11th at 8:30 a.m.

MEETING NOTES

PRESENT: Mr. Brudvig, Dr. Fusaro, and Mr. Grabow.

DATE: February 11, 1970

PURPOSE: To discuss the relationship of the production facilities to the Learning Center and to review what aspects of the Learning Center are under Library jurisdiction.

It was decided that areas D. Health Sciences Arts and Production, F. Television Production, and H. Duplication Center for type reproduction are strictly production and need not be located near the Learning Center; the location will be in Unit F.**

Areas A. Carrels and C. Audiovisual library and professional technical offices, consultation and meeting rooms areas are in the Learning Center and will be under Library supervision.

Areas B. Central equipment pool and materials storage area, E. Service training area and first-line production, and G. Computer-aided instruction and production will be in the Learning Center but not under Library supervision.

**Note: Letters A through H refer to the space allotment needs given to Vice-President Donald K. Smith.

MEETING NOTES

PRESENT: Mr. Christenson, Mr. Finch, Dr. Fusaro, and Mr. Grabow.

DATE: February 12, 1970

PURPOSE: To discuss the technical needs in Arts and Photography and the technical needs in the carrels.

Dr. Fusaro reviewed the February 11th meeting. He again emphasized that areas A. Carrels, and C. Audiovisual Library and professional technical offices, consultation and meeting rooms areas are to be administratively run by the Library. Areas B. Central equipment pool and materials storage area, E. Service training area and first-line production, and G. Computer-aided instruction and production will not be under Library function but will have to be in the Learning Center area.**

Wes Grabow and Glenn Brudvig will make the decisions regarding the technical needs of the carrel area. It was felt that the carrels should have the potential of being 100% wet (that includes computer terminal).

LeRoy Christenson, Martin Finch, and Wes Grabow will meet and discuss studio needs. Jim Butler will meet with LeRoy Christenson and Martin Finch regarding D. Health Sciences Arts and Production.

There should be two areas to the Audiovisual Library; the lending area and the master storage area.

Some of the larger classrooms should have the capability of a production facility (T.V. and Motion Picture).

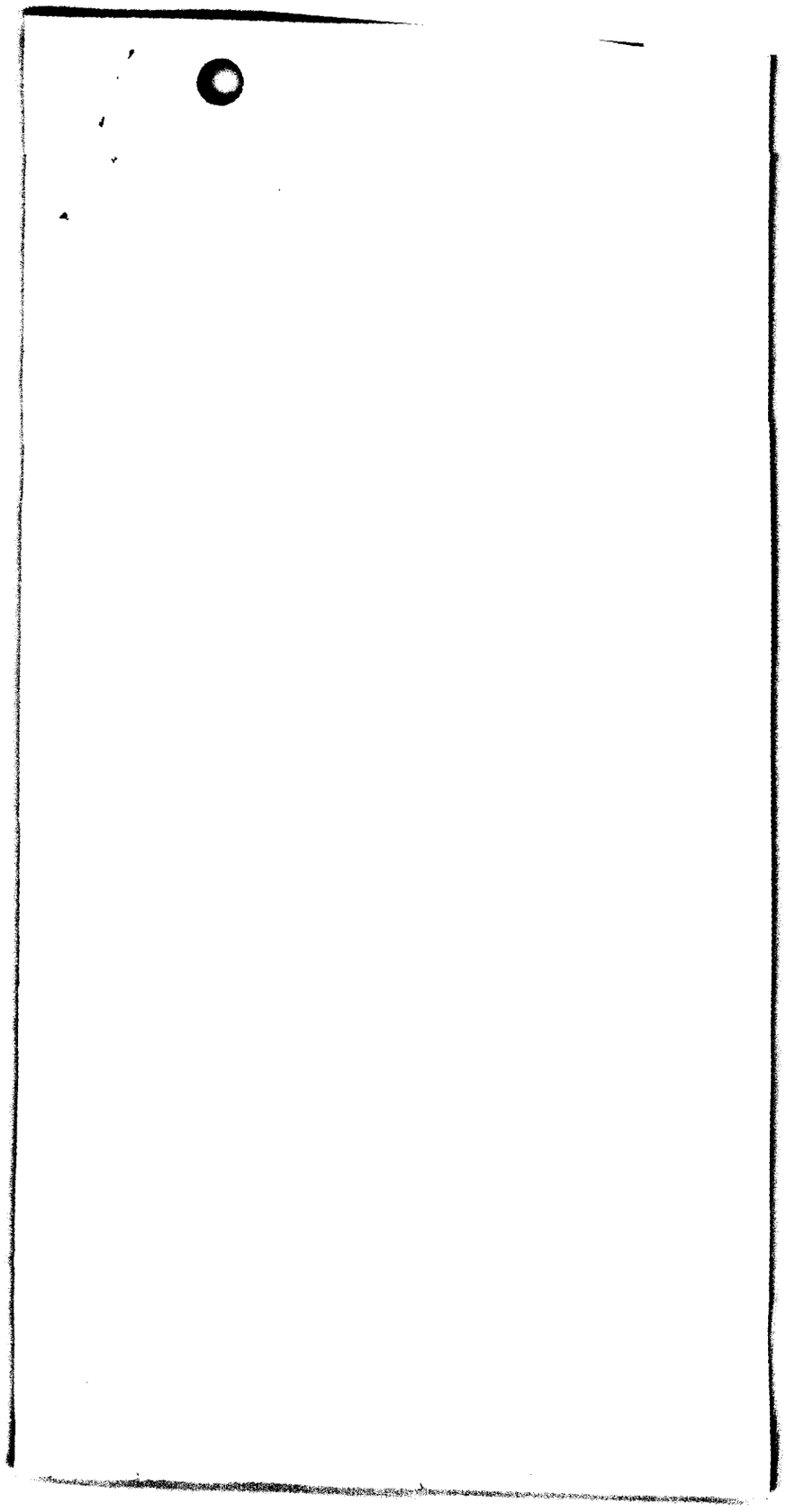
Hugh Peacock should be contacted in order to find out if Washington Ave. is going to be remodeled and depressed. If so, this will introduce vibrations from the heavy traffic and will effect T.V., Motion Picture, and Photography areas.

The Health Sciences will need a video tower so that they can receive and transmit to the affiliated hospital libraries throughout the community.

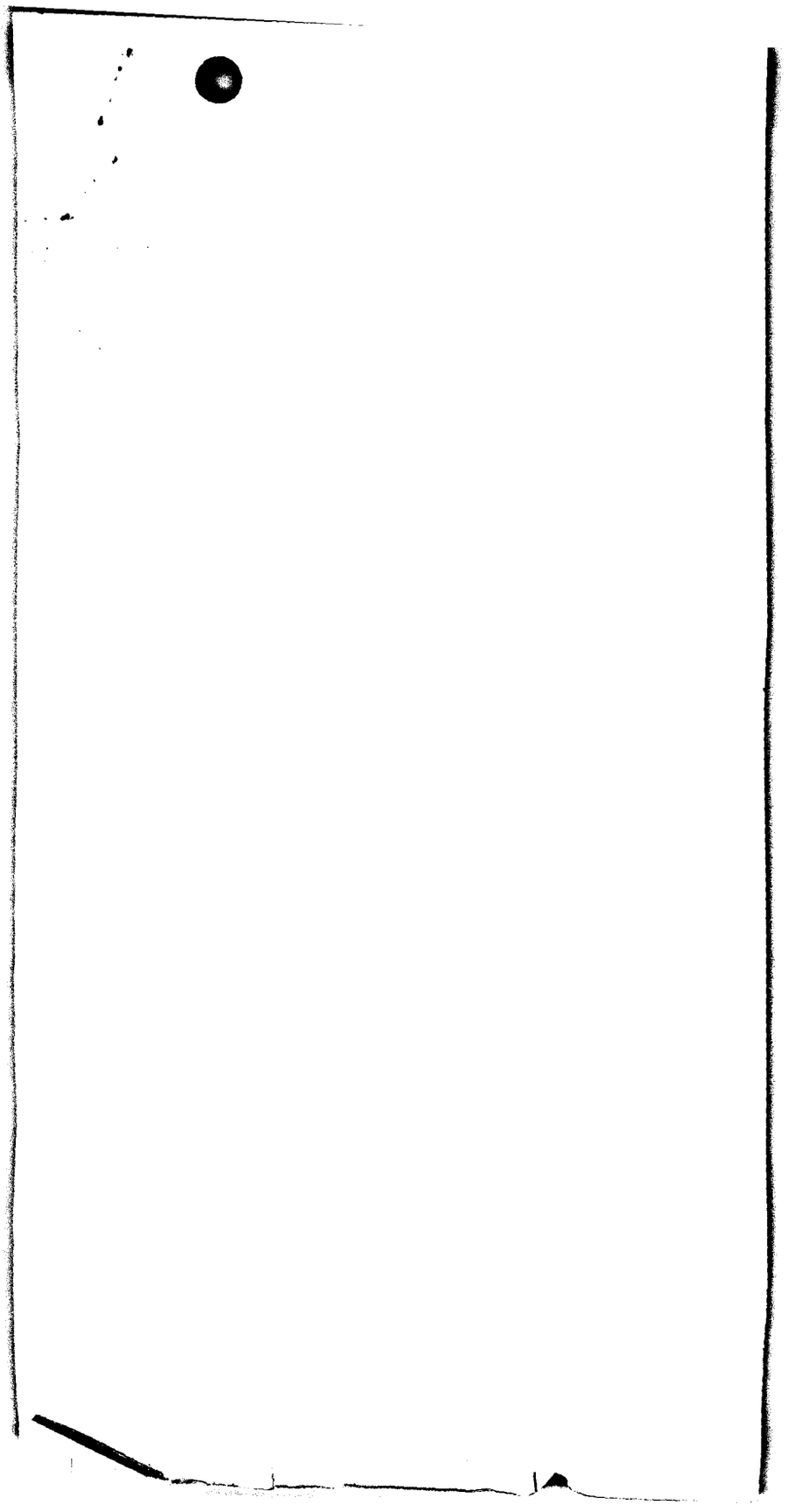
The question was raised whether the present large classrooms, Mayo, Todd, and Eustis, will be connected to the communication centers in the Learning Center and Production areas.

**Note: Letters A through G refer to the space allotment needs given to Vice-President Donald K. Smith.

		Sq. ft.
A.	Carrels (#200)	4,500
1.	Supervisory and approach area	200
2.	Central tape audio and video playback	800
3.	Storage of equipment and materials	1,000
	Sub-total	6,500
B.	Central equipment pool and materials storage area	
1.	Small recording studio	200
2.	Preview rooms	300
3.	Equipment storage and first line maintenance	600
4.	Staff materials advisory booker and technician	400
	Sub-total	1,500
C.	Audiovisual library and professional technical offices, consultation and meeting room areas	
1.	Audiovisual library	3,000
2.	Professional technical offices, consultation and meeting rooms	500
	Sub-total	3,500
D.	Health Sciences arts and production	
1.	Still, motion picture production and studio	3,000
2.	Arts production	1,000
3.	Dark room space	1,000
4.	Professional technical offices, consultation and meeting rooms	1,800



		Sq. ft.
E.	Service training area and first-line production	1,000
F.	Television production	
	1. Production studios (2) and immediate support areas	3,000
	2. Master TV control (15 units simultaneous)	3,000
	3. Support workshops and supplies	1,500
	4. Professional technical offices and consultation and meeting rooms	2,000
	Sub-total	9,500
G.	Computer-aided instruction and production	
	1. Computer-aided instruction and production	1,500
	2. Professional technical offices and consultation and meeting rooms	700
	Sub-total	2,200
H.	Duplication center for type reproduction	2,000
	GRAND TOTAL	33,000



Unit c file

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

February 19, 1970

TO:

FROM: Dr. Ramon M. Fusaro, Chairman, Learning Resource Center Planning Committee for the Health Sciences.

RE: Please direct the enclosed letters to your curriculum chairman for his attention.

We received the enclosed letter from TAC. Will you please ask your faculty how your curriculum needs will affect the use and design of this classroom.

I would appreciate an answer within three weeks. Thank you.

Tim I sent this to the Dean to forward to each college to their curriculum chairman

Ramon

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

THE ARCHITECTS COLLABORATIVE

JEAN B. FLETCHER
1945 —— 1965
NORMAN FLETCHER
WALTER GROPIUS
1945 —— 1969
JOHN C. HARKNESS
SARAH P. HARKNESS
LOUIS A. McMILLEN

RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
ROLAND KLUVER
PETER W. MORTON
H. MORSE PAYNE, JR.

ERNEST L. BIRDSALL
COMPTROLLER

14 January 1970

Mr. C. Thomas Smith
Associate Director
Health Sciences Planning Coordinator
University Hospital
Minneapolis, Minnesota 55455

Re: University of Minnesota Health Sciences Expansion
TAC Job No. 68013

Dear Mr. Smith:

~~To aid in developing the programmed 350 seat thrust stage auditorium in Unit C, we would like the following information:~~

I. The following should be established to aid in determining the optimum and minimum lateral dimensions of the thrust stage.

A. We are assuming that rehearsals and practice demonstrations of surgical sessions will all take place in the surgery suite, and be transmitted to places of viewing through video.

B. It should be determined if the morbid anatomy demonstrations will all eminate from the anatomy suite, or if this audtiorium will be used to some extent for this.

C. The space requirements and any anticipated special uses should be reviewed with each of the clinical services that might use the auditorium. Medical art and photography should be questioned regarding their uses and special props.

D. The number of video cameras to be allowed for should be determined:

1. Two positions are recommended by us, in lieu of another requirement by the client.

2. Articulated arms for the cameras should be considered. The installation of a fixed overhead camera in the center of the room should be reviewed.

46 BRATTLE STREET, CAMBRIDGE, MASSACHUSETTS 02138
TELEPHONE: (617) UNIVERSITY 8-4200 CABLE: TACCAM CAMBRIDGE

II. The following must be established to enable 350 seats to have a satisfactory view of the thrust stage.

A. Within the confines of the structural and mechanical systems of Unit C we cannot both fit the programmed number of seats for a thrust stage arrangement, and at the same time provide one central point for a projected image that would be satisfactory for all of the seats. Therefore we would propose using a series of TV monitors in the auditorium, transmitting all images through these media. If comparative viewing is necessary, two monitors within sight range of each viewer will have to be provided.

III. It should be determined whether or not radiology demonstrations will take place in this auditorium.

A. We deem that a maximum of only 80 persons can adequately view an x-ray film from optimum positions. We would suggest, therefore, transmission of these film images through TV monitors. If the anticipated 1200 to 1600 line video transmission would not be satisfactory, another means of viewing the films must be sought.

Yours truly,

THE ARCHITECTS COLLABORATIVE, Inc.

William P. O'Leary

WPO'L/bb

cc: R. Turner
K. Taylor

UNIVERSITY OF *Minnesota*

COPY H.S. Exp. Plat Form. AV 17.0

PLANT SERVICES
18 FOLWELL HALL · MINNEAPOLIS, MINNESOTA 55455

March 3, 1970

Mr. John Scott, AIA
The Architects Collaborative Inc.
46 Brattle Street
Cambridge, Massachusetts 02138

Subject: Step I Unit A
Auditoria

Dear Mr. Scott:

Reference is made to your letter of February 24, 1970 concerning the Unit A Auditoria, the property line and easement restrictions and the proposed Washington Avenue Tunnel.

The reason for extending the Auditoria beyond the limits of the easement was to accomplish 2W (W = width of screen) distance from the projector lense to the screen. In checking with the University Audio-Visual Department, we find that 1.5W distance will be quite satisfactory. This will require a special high speed lense (costing less than $100.00 per camera extra). The projector can apparently be so specified.

We recommend this solution rather than a revision of the easement and the special underground structure which could cost several thousands of dollars, and would prevent some problems with the easement. May we have your comments.

Very truly yours,

A. B. Kemper
Senior Engineer

ABK:dmw
cc: Tom Smith ✓
Brooks Cavin
E. A. Kogl
Robert Turner
Roland Kluver

THE ARCHITECTS COLLABORATIVE

JEAN B. FLETCHER
1945 ——— 1965
NORMAN FLETCHER
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JOHN C. HARKNESS
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LOUIS A. McMILLEN

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WILLIAM J. GEDDIS
ROLAND KLUVER
PETER W. MORTON
H. MORSE PAYNE, JR.

ERNEST L. BIRDSALL
COMPTROLLER

24 February 1970

Mr. Al Kemper
Senior Engineer
Department of Plant Services
Folwell Hall
University of Minnesota
Minneapolis, Minnesota

Dear Al,

The enclosed sketch shows a possible relationship of Unit A auditoria to the property line and Washington Avenue tunnel. Dimensions for the tunnel are taken from Plant Service drawing no. 11605.

It might be noted that this proposal respects the proposed easement except for a cantilevered projection area. This cantilevered portion, however, would not interfere with construction of the tunnel assuming 2' is adequate for forming the tunnel-wall. It might be suggested that the void between Unit A construction and the tunnel be left open to accept ventilation equipment for the tunnel and also to isolate any vibration which might be transmitted by dense fill.

Using this configuration we will be able to realize the 18' dimension critical to rear projection. The 350 seat auditorium is designed down to inches and will not accept movement of the screen projection equipment back without losing programmed seating capacity and altering the site lines. Obviously we would prefer to extend the rear projection area consistently to the property line and floor level for the length of Unit A. We are agreeable to making this compromise if efforts to come to an agreement with the Highway Department force us to do so. We have recently reduced the overall length of the complex by changing from a 12'-6" to a 12'-4" grid and can foresee no further dimensional reduction of the project.

Your truly,

THE ARCHITECTS COLLABORATIVE Inc.

John Scott

JS/kb

Enclosure
cc: Tom Smtih, Brooks Cavin, Robert Turner, Roland Kluver

46 BRATTLE STREET, CAMBRIDGE, MASSACHUSETTS 02138
TELEPHONE: (617) UNIVERSITY 8-4200 CABLE: TACCAM CAMBRIDGE

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

March 26, 1970

TO: C. Thomas Smith

FROM: Ramon M. Fusaro, Chairman, Learning Resource Center Planning Committee for the Health Sciences.

RE: Reply of Curriculum Chairmen about the Use of Thrust Auditorium Mr. O'Leary's Letter of 1/14/70.

The Nursing School is the only school which has answered me. I am sending a second letter. If no reply by 4/17/70, I will call together our Committee to help you make a decision on the Thrust Auditorium.

Enclosed is a copy of that second letter I have sent out.

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

March 25, 1970

TO:

FROM: Dr. Ramon M. Fusaro, Chairman, Learning Resource Center Planning Committee for the Health Sciences.

RE: Letter of 2/19/70; 350-seat thrust-stage auditorium.

I have not heard from you regarding Mr. William P. O'Leary's (TAC) inquiry about the needs for the thrust auditorium. I would appreciate a prompt reply.

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

LEARNING RESOURCE CENTER PLANNING COMMITTEE WITH TAC

April 15, 1970

Present: Mr. Don Mawha, Mr. Robert Turner, and Mr. John Harkness (TAC). Mr. Glenn Brudvig, Mr. Martin Finch, Dr. Ramon Fusaro, Mr. Wesley Grabow, Mr. Ken Nelson (for Dr. Ed Rippie), Mr. Gary Peterson, Dr. Barbara Redman, and Mr. Bob Schwanke.

The objective of the meeting was to review the plans of the teaching auditoriums and seminar rooms. The plans of the auditoriums' communication facilities were explained by TAC. The Committee made the following recommendations: (1) TV projection and receiving only in 350-seat auditorium, (2) adequate stage access in all three auditoriums, (3) additional side projection screens for simultaneous projection, (4) TV reception from teaching labs and demonstration areas, (5) audio-response in large, 350-seat auditorium, (6) directional microphones for receiving student response, (7) lectern with auto-control in each of the auditoriums for communication and lighting by speaker, and (8) seminar rooms need access to conduit for TV, computers, etc.

TAC will be sending Dr. Fusaro a list of items programmed into the seminar rooms. He will distribute this list to the Committee members.

LEARNING RESOURCE CENTER PLANNING COMMITTEE

April 15, 1970

Members Present: Mr. Brudvig, Mr. Finch, Dr. Fusaro, Mr. Grabow, Mr. Nelson, Mr. Peterson, Dr. Redman, and Mr. Schwanke.

Dr. Fusaro reported that NIH will not fund any structures other than Units A, B, and part of C. Unit L will not be funded. The funds are to be used for education facilities. Beds in Unit C do not qualify nor does the Learning Center.

Dr. Fusaro proposed that new funding sources be explored by the Committee. Mr. Brudvig will contact Dr. Cummings at the National Library of Medicine to see if Unit L can be funded under the Medical Library Assistance Act. NLM included not only the library but the audio-visual center at Atlanta under its organizational structure; therefore, we could use the same Federal organizational structure and apply for funding for Unit L (including both the Learning Center and Production Unit). Mr. Wesley Grabow will get further information on Title VII of the Higher Education Act (National Defense Act) to explore funding through this legislation. Mr. Bob Schwanke will talk to Dr. Gaylord Anderson concerning Public Health Acts which can support the construction of Unit L. Dr. Barbara Redman will explore any Nursing legislation for possible support. Dr. Fusaro will speak to Dr. William Fifer, University representative of the Regional Medical Program, about RMP support.

UNIVERSITY OF Minnesota

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

April 15, 1970

Vice President Hale Champion
Planning and Operations
301 Morrill Hall

Dear Vice President Champion:

I am enclosing a copy of the minutes of the meeting of the Learning Resource Center Planning Committee for the Health Sciences to keep you immediately informed on our progress. The Committee is very concerned about the decision reached by NIH not to fund Unit L under the Health Manpower Act, and we will be exploring several possible alternate sources for matching funds.

I just returned from the University of Nebraska Medical School. They have just built a new multi-story medical library building which they will occupy this July. One of the floors has a Learning Center which will be larger than our proposed Learning Center in Unit L, even though their Medical and Nursing Schools are much smaller than ours. They are remodeling their previous medical-library space and putting in a bio-communication production unit similar to our proposed production facility in Unit L. Their Learning Center will be functioning this fall and a larger Production Unit will be in operation within a year.

After seeing what they are doing there, we can be proud of the foresight of our Medical Educational Policy Committee's decision to immediately put into operation a pilot-Learning Center in our Bio-Medical Library in order to support the new curriculum this fall. The construction of the Learning Center in Unit L will be needed to support the expanded curriculum of each of the Colleges of the Health Sciences.

Sincerely,

Ramon M. Fusaro, M.D., Ph.D.
Associate Professor and Chairman
Learning Resources Planning Committee for the Health Sciences

RMF:lw

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

Enc.

LEARNING RESOURCE CENTER PLANNING COMMITTEE

April 1, 1970

Members present: Mr. Brudvig, Mr. Christenson, Mr. Finch, Dr. Fusaro, Dr. Geier, Mr. Grabow, Mr. Peterson, Dr. Redman, Dr. Rippie, Mr. Schwanke.

Dr. Fusaro stated there were no funds allowed for beds in Unit C. Unit L will not be affected by these new developments. It is still undecided as to the location of the Production Unit.

Dr. Fusaro asked all the members to contact their individual curriculum chairmen and ask them to respond to the letter regarding the thrust-stage and their use of this stage.

The Division of Health Computer Science would like more space than the 2,000 square feet alloted to them. However, no additional space is available. It was suggested that the 2,000 square feet be used for computer production and development with the learning terminals in the Learning Center. The Committee agreed to approach the Division on this possible solution. It was also suggested that Dr. Ackerman talk to the Committee.

Since we will not be able to meet the needs of the students with the assigned 200 carrels in the Library for 5,000 students, Dr. Fusaro suggested the development of a portable carrel so that the students can take his learning material home. The Committee agreed to explore this possibility.

The Committee recommended a position paper on the advantages of a permanent Health Sciences Educational Resources Committee. Dr. Geier, Mr. Finch, and Dr. Fusaro will meet and prepare a paper to submit to Vice-President Smith. This paper should include the organization of Educational Resources in the Health Sciences and its staff needs.

UNIVERSITY OF Minnesota

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

April 15, 1970

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Planning and Operations
301 Morrill Hall

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Sincerely,

Ramon M. Fusaro

Ramon M. Fusaro, M.D., Ph.D.
Associate Professor and Chairman
Learning Resources Planning Committee for the Health Sciences

RMF:lw
Enc.

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

LEARNING RESOURCE CENTER PLANNING COMMITTEE

April 15, 1970

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17.0

GENERAL DESIGN CRITERIA FOR THE AUDITORIA AND SHARED CLASSROOMS FOR UNIT A

University of Minnesota
Health Sciences Expansion
TAC Job No. 68013
14 May 1970

The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts

UNIVERSITY OF MINNESOTA HEALTH SCIENCES EXPANSION

TAC JOB NO. 68013

UNIT A

AUDITORIA AND SHARED CLASSROOMS

II. Program Information

A. 350 seat auditorium - designed primarily as a lecture room with emphasis on audio-visual instruction

1. Auditorium:
Seating area: approx. 12 a.s.f. per seat exclusive of support

a. Motor driven screen for front projection.

b. Lenscreen for rear projection.

c. Overhead projector.

d. Overhead lectern.

e. Auto control lectern.

f. Public address and intercom system.

g. Conduit to end of each row for a possible future student response system.

h. Intercom between lecturer and rear projector and front projector.

i. Speakers as required.

2. Rear projection room for 350 seat auditorium.

a. 2 x 2 slide projector carousel - Random access.

b. 3¼ x 4 slide projector - Hoppman Automatic.

c. 16 mm. projector arc lamp.

d. Mirrors for rear projection.

e. Video camera, color (not in equipment contract)
Deleted 24 June D.C.C.

f. Projection stands or tables

II. Program Information (continued)

3. Front Projection booth.

a. 16 mm. projector.

b. 3¼ x 4 slide projector.

c. 2 x 2 slide projector.

d. Video projector (not in equipment contract - deleted 24 June D.C.C.)

e. CCTV Controls- tie to Dentistry Production Unit - spare conduit for future tie to learning resources.

4. Support areas in addition to front and rear projection.

a. Patient preparation room.

b. Ante room for after lecture discussions.

c. Instructional material storage.

5. Other instructional aids

a. Tack board min. 4 x 8.

b. White board with blacklight above.

c. Wallspace for mounting maps, charts and x-ray view boxes.

B. 250 Seat Auditoria (a total of two) - seating area @ approx. 12 S.F./seat.

1. For each auditorium

a. Motor driven screen for front projection.

b. Lenscreen for rear projection.

c. Overhead projector.

II. Program Information (continued)

d. Overhead lectern.

e. Auto control lectern with computer terminals.

f. Public address and intercom system.

g. Conduit to end of each row for a possible future student response system.

h. Intercom between lecturer and rear projector and front projector.

j. Speakers as required.

2. Rear projection room for 250 seat auditorium.
For each room:

a. (1) 2 x 2 slide projector - Random access.

b. (1) 3¼ x 4 slide projector - Hoppman Automatic.

c. (1) 16 mm. projector - arc lamp.

d. (2) mirrors.

e. (1) Video camera, color for two rooms (not in equipment contract - deleted 24 June D.C.C.).

f. (2) projection stands or tables

3. Front projection booths (two).

a. 16 mm. projector -arc lamp.

b. 3¼ x 4 slide projector.

c. 2 x 2 slide projector.

d. Video projector (not in equipment contract - deleted 24 June D.C.C.).

e. CCTV controls - tie to Denistry Production - spare

II. Program Information (continued)

conduits for ties to learning resources unit.

f. (3) projection stands.

4. Support (other than front and rear projection)

a. Patient preparation room.

b. Ante room - 1 each.

c. Instructurional material storage.

5. Other instructional aids

a. Tack board min. 4 x 8.

b. White board with blacklight above.

c. Wallspace for mounting maps, charts and x-ray view boxes.

C. 200 Seat Auditorium

1. Auditorium - seating @ approx. 12 SF./seat.

a. Motor driven screen for front projection.

b. Overhead projector.

c. Overhead lectern.

d. Public address and intercom system - 2 microphone outlets.

e. (2) speakers and wall baffle.

f. 3 way light control from lectern 0.1 F.C. at or around projection screen area.

2. Front projection room.

a. 16 mm. projector.

II. Program Information (continued)

b. 3¼ x 4 slide projector.

c. 2 x 2 slide projector.

d. Video projector.

e. CCTV controls - tie to Dentistry TV Production Unit-spare conduit for future ties to learning resources unit.

D. 100 Seat Classroom

1. Classroom

a. Motor driven screen.

b. Overhead projector.

c. Overhead lectern.

d. Amplifier, speakers, microphone.

e. 4 TV monitors.

f. 16 mm. projector.

g. 2 x 2 slide projector.

h. 3¼ x 4 slide projector.

2. Support (other than front and rear projection).

a. Patient preparation and waiting room.

b. Ante room

c. Instructional materials storage.

E. 50 seat classrooms (provide 3). -seating @ approx. 15 S.F. /seat.

1. Classrooms.

a. TV monitors.

II. Program Information (continued)

b. Space for O.H. and front projection.

c. Projection screen, chalk board.

d. Storage for teaching material.

F. 150 seat demonstration room (shared between pharmacology and physiology.

1. Demonstration Room

a. Motorized projection screen.

b. 2 x 2 slide projector.

c. 35 mm. slide projector.

d. TV receivers.

e. TV camera.

f. Animal or table.

g. Instrument stands.

2. Preparation.

a. Bench

b. Storage shelves (instructional materials).

c. Bulletin board.

d. Piped services, water, gas, compressed air.

e. Sink.

G. Seminar rooms (17) @ (12-20) capacity.
Each provided with:

a. Lockable storage.

II. Program Information (continued)

b. 70 x 70 projection screen.

c. Chalk board.

d. Conduit stubs for future wiring tie to learning resources retrieval unit.

e. Conduit tie for future TV monitors to large lecture rooms.

f. Stripping for future study carrels.

III. General Bases for Development

A. Vertical Sight Lines: A person in each seat should be able to see whatever projected images, graphics, demonstrations, monitor images, and lecturers' stations are programmed for each space. He should not have vision interrupted by the heads of persons seated in front of him.

B. Lateral Sight Lines: The angle from the central projected image should not be so great that the image is lost. We have used 45 degrees from the image center as our guiding figure. This 45 degree angle is most critical for rear projection, not quite so critical for chalk board or front projection.

C. The ideal maximum and minimum distances of seating from a point of projected image is a factor of the width of the projected image (w). The ideal maximum distance is 6w to 7w; the minimum is 2w. These widths move across an arc formed within the confines of 45 degrees from the perpendicular from each side.

1. The criterion for a video monitor is a maximum of 12w and a minimum of 4w, w based on the diagonal of the screen. The 45 degree angle from perpendicular is also appropriate here.

D. Code Limitations

1. The number of exit units required, and the number of

III. General Bases for Development (continued)

separate exits required: 350 capacity - 4 exits
250 capacity - 3 exits
200 capacity - 3 exits
100 capacity - 2 exits

2. Aisle widths: Generally 3'6" minimum at front increasing at a rate of 1½" per 5 feet for double loaded aisles.

3. Limits of number of seats to aisles: 14 seats in one block with 2 aisles; 7 seats in one block with 1 aisle.

E. Acoustic Considerations

1. These are all "speaker" type lecture spaces.

2. A detail for the side wall surfacing has been designed, which will have either a reflective or an absorbent backup. Front and overhead surfaces are to be generally reflective.

F. 1. The front projection rooms.

a. Area needed for the projection of all programmed equipment.

b. An unobstructed throw of the images to the front projection screen.

c. A bottom "sight" angle of about 15 degrees or less to bottom of projection screen.

2. The rear projection areas.

a. Area needed for all programmed equipment.

b. Throw distances from point of projection to R. P. screen.

1) 2 to 3w is optimum.

2) 1½w is possible with special lensing.

3) 1w is possible with a single mirrored image.

III. General Bases for Development (continued)

F. (continued)

3. Overhead projection provisions.

a. 1¼w distance from projector to screen is needed.

b. There must be a mechanical provision for canting the front projection screen to provide a satisfactory angle for the image to prevent keystoning.

c. A lectern location wherein the seated instructor won't obstruct viewing of the image.

4. Video front projection
A location 30' ± from the screen is optimum for existing equipment, however, further investigation may allow video projection to be placed in front projection booth.

5. Video photography

a. Stations are to be provided where requested.

b. Lockup storage for cameras is to be provided.

6. Video monitors

a. The locations must not interfere with the viewing of other media.

b. Their spacings and frequencies must be coordinated with the "w" factors as well as with lighting, mechanical outlets, sprinklers, and more general systems or design.

7. Motorized screens are to be provided for front projection and overhead projection, as previously noted.

8. Chalkboards , tackboards, and space for maps, charts and x-ray view boxes should be provided at the front of the rooms.

III. General Bases for Development (continued)

F. (continued)

9. The lecturers' lecterns

a. The lecturers should be in view of all seats.

b. Special highlighting, lighting and speaker provisions must be made.

c. There should be an option of left or right handed placement of the lecterns.

10. Viewing of x-ray films. Involves sight distance limitations similar to TV, i.e., viewing distance not to exceed 12w ±.

G. Spacing of Seating

1. We are, in most rooms, planning for seats with folding tablet arms.

2. We are using a side to side spacing of minimum 20".

3. Our back to back spacing is 3'- 2", which allows 10" clear from front of open tablet arm to the back of the seat in front.

H. Sound Insulation

1. Outlet noise from air handling units is to be avoided.

2. A vibration analysis should be made at the street, and in anticipation of the Washington Avenue tunnel. Special construction analysis will have to be made. This must be done by consultation with an authority. Temporary acoustic insulation measures will have to be considered when and if the proposed tunnel becomes a reality.

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

May 14, 1970

Dr. Francis W. Lynch
Department of Dermatology
C 395 Mayo

Dear Doctor Lynch:

The Learning Resource Center Planning Committee for the Health Sciences met on Tuesday, May 12th, with the architects. I pointed out the auditorium needs for patient demonstration in Dermatology. It appears that from the original request which you submitted for a patient demonstration area in the out-patient area, TAC has programmed the 350-seat auditorium for our use. I pointed out to the Committee and TAC that the size of this auditorium would favor primary use by large classes rather than small groups (100). Therefore, I asked them to take the small 150-seat auditorium, which is in a nearby area, and modify that for Dermatology patient demonstration. It appears that this modification is acceptable.

Sincerely yours,

Ramon M. Fusaro, M.D., Ph.D.
Associate Professor
Chairman, Learning Resource Center Planning Committee

RMF:lw

CC: C. Thomas Smith
Coordinator for Health Sciences Planning and New Construction

UNIVERSITY OF Minnesota

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

May 15, 1970

To: Members of Learning Resource Center Planning Committee

From: Ramon M. Fusaro, Chairman

Re: Position Paper

Please make any final additions or corrections on the enclosed draft of the Position Paper for our Committee so that we can forward it to Vice-President Champion. After reading it and adding your comments, send it back to me. (Box 288 Mayo)

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

The University of Minnesota is about to start a $100,000,000 Health Sciences expansion program as the beginning of an even larger building program (University, V.A. Hospitals, etc.). An important educational aspect of this first phase of construction is in jeopardy unless Unit L (the Learning Center and production facilities) is incorporated into the present construction to be completed by 1974-75. Our student enrollment will go from 3000 to over 5000 students. In the December 1968 issue of the University of Minnesota Alumni News, an article on Health Sciences expansion notes the development of new curriculums within the Schools (track programs) and the primary emphasis on "self-education and continuing education." The purpose of the Learning Center is to foster self-instructional techniques under faculty guidance and to teach students the learning modes they will use for the rest of their lives in their continuing health education.

The idea of the Learning Center is not new. It is a well established teaching function in primary and secondary education. The present new undergraduate students have been trained to use the multi-media approach to education. Medical and Dental schools across the country have Learning Centers functioning at the present time (Nebraska, San Diego, Virginia, Iowa, Michigan State, U.S.C., Houston, Connecticut, and Harvard). In the summer of 1968 the Committee for the Study of Physical Facilities for the Health Sciences excluded the Learning Center from the first phase of construction; however, our 1968 NIH grant (for matching construction funds) referred to the concept but did not specify any construction date. In the summer of 1969, HEW reviewed our grant and requested we improve the educational aspects of our construction to include a Learning Center. Because of HEW's request, Vice-President Smith reactivated the committee on Health Sciences Teaching Space Task Force on Instructional Resources. During the previous two years, this group developed the concept and proposed the Learning Center.

In April of 1968 a letter from President Moos called attention to the Health Sciences Committee on Educational Resources and its purpose to recommend procedures by which the educational methods in the Health Sciences may be improved. Vice-President Smith in a letter of June 1968 noted that the Health Sciences were not alone in the development of undergraduate Learning Centers as there were several on the main University campus. On January 20, 1970, Doctor Fusaro received a letter from Frank W. McKee, M.D., Director of the Division of Physician Manpower, stating "It is gratifying to know that the University of Minnesota plans to include a Learning Center in its 1973 Health Sciences' construction. I feel sure this pioneering step in medical education will be reflected in improved delivery of health services in the future."

Presently our faculty is using the techniques and producing the software to be used in the Learning Center. The Medical School along with the Biomedical Library is developing a pilot-Learning Center on the fourth level of the Library. The Medical School's Educational Policy Committee has adopted a new curriculum and endorsed the development of the present pilot-Learning Center for medical students. The University Library system has accepted this responsibility and is planning new positions to support the Center. The Biomedical Library Committee has endorsed the Learning Center for all Health Sciences students in order to have a facility to use the software being produced in numerous Health Colleges. The Medical School has received $40,000 within the last six months to purchase hardware and produce software for the Center. Because of lack of space in the Library, the Dental School has built and is operating a pilot-Learning Center on Oak and Washington over the Steak House Cafe. They have received funds to purchase hardware ($50,000) and hire staff for the Center. The Medical Technologists are using a small Learning Center in Powell Hall. The Schools of Nursing and Public Health are also

interested in using the pilot-Learning Center on the fourth level of Diehl Hall, but the facility is not adequate to handle even the present Medical School enrollment.

There is no central administration of educational resources in the Health Sciences; therefore, indiscriminate duplication of facilities and personnel appears to be the present modus operandi. There is no coordination or cooperation in the use of facilities, equipment and personnel. Even more important, students and staff must go to various locations in order to make use of the educational resources now available.

The National Library of Medicine (NLM) has reorganized and incorporated the National Audio-Visual Center under the Library. NLM is at present using a single catalog system for all print and non-print (slides, film, tapes, etc.) materials. They are attempting to catalog all software (teaching materials) being produced in Health Colleges. In addition NLM is establishing a National biomedical communication network to provide medical schools with a communication mechanism in order to use the library resources of NLM. Without the Learning Center and its production facilities, we will not be able to take full advantage of educational materials available through the NLM. Without the production facilities, we cannot modify available teaching materials for the faculty to use in their courses.

Two years ago President Moos appointed the Cashman Committee to make recommendations for the administration and orderly growth of educational resources. The essential points in that Committee's recommendations are:

1. A Coordinator for all University Educational Resources.
2. The Coordinator should complete an inventory of educational resources throughout the University and to improve the service and assistance to the faculty.

3. The Coordinator should develop a coherent plan for the development of educational resources.
4. Establish a new Senate Committee on Educational Resources. Such a commitee would eliminate current overlap of functions and would serve as a policy-making body to develop necessary policies regarding the use of educational resources.
5. The Coordinator for Educational Resources would approve all budgets for educational resources by units of the University, regardless of the source of funds.
6. The Coordinator of Educational Resources should work toward the provision of an advisory service for faculty regarding the use of educational resources, either through units now working in the area or through a staff reporting to him.
7. The University should undertake a general program of educational innovation aimed at the more extensive use of educational resources by faculty to assist them in instruction, research and service.
8. The Committee is aware, however, of the need for careful planning and thoughtful new programs to provide a maximum effectiveness to faculty of the University.

The Health Sciences Instructional Resources Committee agrees with the philosophy and the objectives of the Cashman report. Realizing that President Moos is now implementing the guidelines of that report at the all-University level, the Committee has attempted to initiate the beginning of those objectives in the Health Sciences by improving our educational resources facilities. Our first objective is the establishment of a Learning Center and its supporting facilities in the new construction scheduled for completing in 1974-5. This Center is to meet the Curriculum needs of faculty and to provide a centrally-used structure which will displace the present dispersed inefficient

and wasteful facilities in the various colleges. In addition, the Committee has been trying to change its status from an ad hoc to permanent status in the Health Sciences in order to carry out the President's guidelines for the orderly growth of educational resources. This Committee feels that it is imperative that a Learning Center and its supportive facilities be included in the Health Sciences construction scheduled for completion by 1974-5.

-c Holland
Fuller

THE ARCHITECTS COLLABORATIVE INC.

TAC

"L" file auditoria 17.0

1 July 1970

Mr. C. Thomas Smith, Jr.
Associate Director
Health Sciences Planning Coordinator
University Hospital
Minneapolis, Minnesota 55455

Re: University of Minnesota
Health Sciences Expansion
TAC Job No. 68013

Dear Tom:

In order to clarify our position on the use of Shared Auditoria in Unit 'A' for patient demonstration, we make the following points:

1. Program: The program document used as a basis for development of design did not include provision for patient demonstration facilities.

2. Facilities: TAC has incorporated changing rooms and holding rooms as subsequently requested related to the 200, 250, and 350 seat classrooms. Except for the dressing cubicles, the spaces can be multipurpose.

3. Elevator Access: As presently planned, patients on litters would have to be moved from clinical facilities to Unit 'A' via the floor 5 circulation link. The Unit 'A' elevators as shown on the design development drawings are large enough to accommodate a Gurney.

4. Circulation: Patient demonstration areas for the auditoria are on floor 1. Direct access from the elevator cores entails moving the patient across the service corridor. Access to the service corridor is provided through the west stair tower in revised Unit 'A' plans. The mixing of patient and service traffic is problematic; the alternative involving considerable added cost and redesign time would be to introduce additional elevators between floor 2 and floor 1 within the auditoria. A third alternative is to bring all patients in from Floor 2 and down the auditorium risers. This would be awkward for litters or wheelchairs, but possible for occasional use.

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Unless directed to modify the planning we will assume that the facilities and access indicated on our current drawings adequately provide for patient demonstration in Unit 'A'.

Yours very truly,

THE ARCHITECTS COLLABORATIVE, INC.

Kenneth Taylor

KT/bb

cc: Robert Turner

UNIVERSITY OF Minnesota

BIO-MEDICAL LIBRARY · DIEHL HALL · MINNEAPOLIS, MINNESOTA 55455

July 24, 1970

Mel Holland
Assistant Dean
School of Dentistry
136 Owre Hall

Dear Mel:

In preparation for our visit to the National Medical Audio-Visual Center in Atlanta, I have summarized below the Learning Resource Center functions and space requirements as it relates to the Library.

The Library's responsibility would be to maintain and service learning materials, both print and non-print, for student use in the Learning Center. This would not include responsibility for the production of materials, unless possibly audio tape recordings, nor would it include maintenance or servicing of audio-visual materials, equipment or programs for classroom use. This has traditionally been part of Audio-Visual Department activities and should continue to be such in my opinion, either as a sub-unit of the Audio-Visual Department or as a separate Health Sciences Audio-Visual section.

The space required to carry out the functions of the Learning Center as it relates to the Library can be outlined as follows:

I. Student Space

A. Learning Carrels
The learning carrels would provide a variety of audio and visual self instruction material for students. These would include equipment for using tapes, slides, filmstrips, single concept films, video recordings, etc.

B. Reading Space
The present Learning Center pilot project includes a collection of basic texts, reprints, and related print materials. To provide full utilization of all approaches to learning, some space should be devoted to print materials, even though most of this function would be handled through regular library operations.

C. Conference Rooms
Small conference rooms would be needed for student discussion groups, small group viewing or listening of audio-visual materials, and for faculty-student conferences.

D. Specialized Learning Equipment
Space should be provided for terminals for computer assisted instruction and for other types of specialized equipment which are available for self instruction.

II. Staff Space

A. Service Desk
This would be the central service area for the learning carrels. An attendant would be available to instruct and assist users, monitor the use of the facility, and check out head phones and some types of learning materials. Some space at the service desk would be needed for shelving or storage of materials checked out.

B. Workroom and Storage Space
Space would be required to store learning carrel equipment which is not being used or which is available for replacing defective machines, for storing materials not currently in use, and for providing workroom space. The staff will need space to index and record materials, prepare displays, process orders, labeling and so forth. Also space would be needed for a small collection of audio-visual catalogs and reference books.

C. Audio and Video Playback Facilities
Some arrangement would be needed for playing of audio and video materials for use in the carrels or for classroom use. However, I am uncertain as to where the responsibility for this activity lies. If it is to be primary for classroom playback, then it should be under the responsibility of the Audio-Visual section.

There would be some overlapping of responsibilities between the Library and the Audio-Visual section, such as the central playback area, preview rooms, the audio-visual library, audio-visual equipment storage and repair, computer assisted instruction support functions, and faculty consultation. If good planning is to proceed in this area, a definition of administrative responsibilities would have to be made.

The major problem in planning the Learning Resource facility as far as the Library is concerned is to relate the facility to other Library functions, such as use of the book and journals collection, indexes and reference works, reserve collection, photoduplication service, and study and reading space. The flow of traffic and the interconnection of the Library and the Learning Center is going to be extremely difficult to solve without causing disruption of both areas. I don't mean to divorce myself from the other areas of Learning Resource planning, such as television and audio-visual

production, but I feel I have little backround or experience in these areas and can contribute most by concentrating in an area where we are beginning to gain some experience.

Sincerely,

Glenn Brudvig
Associate Professor and
Head, Bio-Medical Library

GB/js

cc: R. Fusaro
R. Hopp
C. T. Smith

Mr. Smith
leaving for all files

August 1, 1970

Mr. Charles Farmer
National Medical Audiovisual Center
2111 Plasters Bridge Road N.E.
Atlanta, Georgia 30333

Dear Mr. Farmer:

Thank you for your willingness to have a Minnesota group visit with your staff August 7 regarding instructional resources facilities being planned for our Health Sciences. You should have already received from The Architects Collaborative architectural drawings and descriptions of these special educational facilities. Enclosed with this letter are two sets of informational materials: (1) Description of our proposed educational resources as included in the N.I.H. construction grant application submitted July 1, 1969. Necessarily, some information in this section of the application does not now pertain since revisions have been made. The information particularly pertinent to our visit in Atlanta with your staff is designated in red. (2) A tabulation of "Instructional Resources Center Needs - 1973" as requested by the Health Sciences Instructional Resources Committee. Due to necessary limitations in the over-all Health Sciences development for new facilities, the space now allocated for the teaching resources in the plans you have is a compromise over the proposals in the enclosed documents. Yet we have retained most of the space for lecture and seminar rooms and preserved core elements of audio-visual production facilities and an informational retrieval area. It has not been possible to develop all these facilities in one center.

Educational Programs

New curriculums at the University of Minnesota Health Sciences are being designed to utilize more self learning and small group teaching. More free time is being provided in the students' schedules for auto-tutorial instruction using print and non-print materials. For example, one phase of the Medical School's new curriculum allows up to 4-5 hours per day for

self learning. With the current and future decreases in formal instructional time in health sciences educational programs at Minnesota, it becomes essential that new facilities and teaching materials for self learning be provided. The audio-visual capacity and other facets of the instructional resources must be innovative, integrated, and adaptable to change. Currently, about 3500 students are enrolled in Health Science programs. By completion of the first phase of the proposed construction (approximately 1975) over 5000 are expected to be enrolled. The complexity of health science education and the expected enrollment increases require a well-developed, self-contained health science audio-visual operation yet still related to and coordinated with the University's television and audio-visual departments.

Architectural Plans

You will note in the plans that most of the new lecture and seminar rooms are located on floors 1 and 2 in Unit A with some additional rooms in Unit C. Existing classrooms in adjacent buildings will be upgraded where necessary and should tie in with a centralized audio-visual system. The educational planning committees agreed that lecture rooms would still be used for future teaching but should be designed with the most innovative audio-visual system feasible, including television receiving, origination, and teletaping. The seminar rooms will be designed with some self instruction facilities. For example, students in the seminar rooms could dial for certain teletapes originating from a central control room.

In addition to the seminar and lecture rooms, current plans call for the following developments as part of the Health Sciences instructional resources facilities:

1. 2100 ft.^{2} (could be expanded to 2300 ft.^{2}) for an audiovisual control center. Note location in A1-210 i.e. first floor of Unit A next to 350 seating auditorium. Detailed planning has not been completed for this space but it is expected to be the hub of a distribution system in the Health Science Complex. Electronic interconnection to classrooms, laboratories, hospital stations, seminar rooms, and clinics, departmental production areas, self-instructional carrels, and the Bio-Medical Library would be controlled from this central point. This will permit information to flow in all directions as needed.

   The departmental audio-visual substations would be cable-connected to this central facility so that recordings could be made of materials originating in these locations and/or materials could be distributed to classrooms, seminar rooms, or carrels

from such origination points. For other types of specialized recordings that would not require a permanent installation, portable equipment would be available from the central facility as required. Tapes made through the use of portable equipment could then be available for distribution through the system as needed.

Long range thinking also included consideration of T.V. interconnection with affiliated hospitals in the Twin City area. Such a communication system could be used for instructional, clinical, and research applications in the Health Sciences. It could also be extended to other health science centers in the region and could be a segment of any national system which might develop. The Health Science Center termination point would be in a central facility to provide for origination from any of the production areas in the Center for transmission to hospitals or for distribution of materials received from the hospitals to viewing rooms within the Center.

We recognize that the space allocated for the control center is limited, but it is hoped that with efficient planning a television-motion picture studio and repair shop could be included in the area.

2. An information retrieval area of some 13,000 ft^2 is being planned on floor 2 in Diehl Hall (Bio-Medical Library). This space would be primarily used for 200 learning carrels which would provide a variety of audio and visual self-instruction materials for students. The carrels would include equipment using tapes, slides, film strips, film cassettes, video recordings, CAI, etc. Currently, the Medical School and School of Dentistry are conducting pilot projects in self learning methods. The new retrieval area in Diehl Hall will be designed to receive playback from the television switching area. This plan to have the main non-print retrieval area in Diehl Hall preserves our original desire to have the major print and non-print informational retrieval areas in one location.

3. An audio-visual substation of 2500 $ft.^2$ for the School of Dentistry is being planned in Unit A on floor 16. This station will have facilities for television origination, production and storage of still photographs, slides, audio and video tapes, art work, and other related graphics.

4. A medical art-photography facility of 3300 $ft.^2$ is tentatively planned for Unit C. This facility would be primarily for still production and would probably serve all the Health Sciences.

5. Additional small audiovisual substations will be located in various parts of the Health Sciences Center to serve particular needs. For example, basic science laboratories will have television originating capacity.

It is hoped that from your study of the plans and descriptive materials and from our discussions with you that we can get your reaction to the following:

1. Design of lecture classrooms with particular attention (a) to adequacy of space for number of seats, main aisles, seat aisles, lectern area, entry areas etc. (b) sight lines (c) acoustical potential if possible (d) projection facilities (e) lighting (f) television arrangement for origination, receiving and taping, etc.

2. What realistically could be included in the central control room? - master control, television-motion picture studio, repair shop?

3. Design and audiovisual capacity of seminar rooms.

4. Guidelines for electronic network. Advice on interconnections for seminar rooms, substations, lecture rooms, control room, etc.

5. Location of lecture and seminar rooms.

6. Meeting accepted space standards for certain functions such as lecture rooms, rear screen projection, etc.

7. Recommendations on electronic and other audiovisual hardware. Preferred location of hardware e.g. television monitors in laboratories.

Our Minnesota group would be very interested in seeing your audio-visual facilities and operation if convenient. We know you have gained considerable experience and understanding in audiovisual technology and methods. Thus, we are particularly pleased about your willingness to consult with us on our plans for instructional resources facilities in our Health Science expansion program.

At this time we expect our group will include Dr. Ramon Fusaco, Associate Professor, Dermatology, and chairman of the Learning Resources Committee; Dr. Mellor Holland, Assistant Dean, School of Dentistry; Mr. Dennis Johnson, University Audio-Visual Service; Dr. Robert McCollister, Assistant Dean, Medical School; and Dr. Robert Mulhausen, Assistant Dean, Medical School. In Addition, we expect that Mr. Kenneth Taylor and Mr. Robert Turner, architects, will be with us. They are from the firm The Architects Collaborative, our coordinating architectural firm.

As Mr. C. T. Smith indicated to you in his letter of July 10, we plan to be in your office at 9:00 am on August 7, 1970. Flight schedules are such that most of our group will need to catch a 3:25 p.m. plane. We had originally hoped we could spend more of the afternoon at your Center.

Sincerely,

M. R. Holland

M. R. Holland, Chairman
Health Sciences Teaching
Space Committee

MRH:mmh

c.c. Ramon Fusaro
Dennis Johnson
Robert McCollister
Robert Mulhausen
C. Thomas Smith
Kenneth Taylor
Robert Turner

PART TWO

Section H Systems

1. Audiovisual systems

Educational Resources (Audio-Visual Services)

Existing Organization and Facilities

The existing central audio-visual education program at the University of Minnesota is organized into three primary units. The Department of Radio and Television is responsible for closed circuit television and its related functions of production and distribution. It coordinates the broadcast programming for the University over the community Educational Television Station KTCA and operates Radio Station KUOM. This Department provides certain coordinating and back-up functions for satellite television operations in the University such as in the Health Sciences.

Currently, there are specialized Health Sciences television operations in anatomy, dentistry, eye-otolaryngology, medicine, pharmacology-physiology, physical medicine, and psychiatry. Some are limited, for example, to operations with portable equipment for monitoring and taping patient management and student performance. Others permit greater production and distribution of laboratory and clinical demonstrations as in anatomy and dentistry. Two shared lecture classrooms and laboratories in anatomy, dentistry, and pharmacology-physiology are equipped for television receiving.

The mechanical up-keep of the television equipment in the School of Dentistry is handled by the engineering staff from the Department of Radio and Television. A further example of television coordination at the University is the co-axial cable and audio cable link between the television control rooms in the School of Dentistry and the Department of Anatomy with the University's main CCTV production and distribution center. This link permits video taping of demonstration programs originating in these two areas, the receiving of television programs originating in other University areas, and the presenting of television programs to the community from the dental school and anatomy.

The Department of Audio-Visual Extension collects, catalogues, and distributes motion picture films, audio tapes, and video tapes for use of educational institutions, organizations, and other groups in Minnesota and adjoining areas. This non-print library of 8,300 titles covering all levels of instruction includes over 1,000 titles in the health sciences.

The Audio-Visual Education Service is the on-campus unit that provides audio-visual materials, equipment, services, and facilities for the faculty and staff of the University. Its several divisions provide a back-up function for the many audio-visual activities that are not provided within the departments of the University. It maintains a college level collection of films and film strips of over 1,500 titles, 200 in health sciences. This Service provides evaluation of materials and devices, bibliographies of non-print materials, in-service training, and projection personnel. Motion picture, still photographic, microfilm, transparency, and art work production facilities are provided. The Service can record and duplicate audio tapes. An engineering section maintains and installs all forms of instructional technology. Design of special facilities and consultation in many areas of audio-visual education are available.

These coordinating and back-up functions of the University's Audio-Visual Education Service are valuable and essential. The size of the University and the specialized audio-visual needs of individual colleges and units, make it necessary to maintain satellite audio-visual production operations. Two of these in the Medical School and School of Dentistry produce motion pictures, still photographs, slides, exhibits,

and other graphics for their teaching and research needs.

The lecture classrooms in the Health Science area are provided with projection screens and slide projectors, maintained by the University's Audio-Visual Service. All new construction is examined and studied by the central audio-visual units to ensure proper design and facilities to allow for use of audio-visual materials, devices, and techniques in these classrooms. Specialized facilities and needs are also examined by those areas concerned.

The Health Sciences at the University of Minnesota increasingly recognize the essentiality of developing systems for auto-tutorial learning and information retrieval. At the present time, there are a few electronic student study carrels within several departments of the Medical School. It is anticipated that within the next two years a section of the Bio-Medical Library in the Health Sciences Center will be converted to partial electronic study carrels. During the past two years, the Bio-Medical Library has been developing a computer based operation for information retrieval. An automated system for handling journals went into operation January 1968. Books and circulation records will be added to the system. By the summer of 1969, on-line operations utilizing cathode ray tube consoles will begin. It is expected that audio-visual materials will be included in this system, allowing users to have access to a unified record of all types of learning materials, both print and non-print. The Library is also planning to create a microfilm file of original journal articles from the most heavily used journals. This will allow easy reproduction of the most used materials and provide for remote transmission of documents to stations outside the Library for viewing and reproduction. For material used only occasionally, the original book or article will be used for electronic transmission. A grant application from the USPHS is now pending to begin developmental work on this system.

At the present time a special ad hoc committee, appointed by the President of the University, is studying new ways to strengthen the coordination of the University's Educational Resource Program including print and non-print areas. It has a prime purpose to expand the innovative and experimental functions of the program as well as the implementation coordinating and consultative functions.

Proposed Health Sciences Audio-Visual Services

During the planning of new physical facilities for the Health Sciences at the University of Minnesota, the Planning Office appointed several committees and groups to present proposals for the development of audio-visual services and other educational resources for the Health Sciences. Faculty committees representing the various units of the Health Sciences, determined the space and audio-visual needs for the teaching classrooms. Another committee worked on educational resources such as facilities for information retrieval and production of audio-visual materials and programs. Appropriate consultations have been carried out with representatives of the University's Department of Radio and Television and Audio-Visual Education Service. The committees agreed that auto-tutorial, audio-visual, and sophisticated electronic technology and systems will most certainly be utilized extensively in future health science education. In the face of rising enrollments, these innovative educational systems will permit more efficient teaching and learning for a greater number of students. Vast quantities of knowledge will be stored and retrieved more easily. The auto-tutorial system, for example, will allow the student to proceed at his own pace and separate subject matter into units commensurate to his own ability.

Currently, about 3,500 students are enrolled in Health Science programs. By completion of the first phase of the proposed construction (approximately 1975) over 5,000 are expected to be enrolled. The complexity of health science education and the expected enrollment increases, require a well-developed, self-contained health science audio-visual operation yet still related to and coordinated with the University's television and audio-visual departments.

Since the expansion of physical facilities for the Health Sciences will be implemented in stages over a number of years, the audio-visual services will have to be developed as fully as possible in the various phases of construction for tie-up with centralized facilities. Ideally, the audio-visual systems should be concentrated in and coordinated with an Instructional Resources Center adjacent to the Health Sciences Library. Long range planning is directed to this kind of consideration. To achieve the ultimate in educational resources for our Health Sciences Center would require the simultaneous construction of all the proposed health science units and a major commitment of space and funds now for an Instructional Resources Center. Funding limitations clearly prevent this.

Audio-Visual Services for Construction Unit A

In the first step of construction for which this grant application is made (Unit A in Phase I), educational facilities will include shared classrooms, basic science laboratories, specialized laboratories for the School of Public Health, and clinical, laboratory, and study areas for the School of Dentistry. The new lecture rooms will be planned with the most careful attention given to sight lines, acoustics, public address systems, blackboards, projection screens, slide and motion picture projection equipment and location, x-ray viewing, and television origination and receiving. Front, rear screen, and overhead projection will be provided in most classrooms. Television monitors will be connected to receive signals from dentistry's television studio, laboratories, and clinics and from within the classroom. Control of the classroom audio-visual facilities will be as automated as possible. Lighting will be diversified: fluorescent and incandescent, rheostated, ultraviolet for chalk boards. Conduit or accessible plenum and service spaces will be provided to permit an electronic tie-in of the classrooms with audio-visual production and distribution areas in future Health Science units. Since it is very possible that the lecture method of teaching may decrease and self-instruction increase, the design of the lecture classrooms will be sufficiently flexible where appropriate to permit easier remodeling to tutorial classrooms. Seminar rooms in Unit A will be equipped for projection of slides and movies and in some instances sufficiently equipped for some self-instruction with audio-visual materials. Some general purpose study carrels or areas with potential for information access are expected to be provided in Unit A. The appropriate communication network will be provided for television receiving in the teaching laboratories for the basic sciences and School of Public Health.

The School of Dentistry will have the majority of its educational facilities in Unit A. Included for dentistry will be one of the several audio-visual substations in the overall future Health Sciences audio-visual operation. This station will have a centralized area for a television-motion picture studio, television control room, and facilities for production and storage of still photographs, slides, audio and video tapes, art work, and other related graphics. The dental school's central audio-visual area will have installed initially electronic communication with the University's main CCTV production and distribution center, the lecture classrooms and the laboratories, clinics, and specialized study areas in the school. Further, there will be conduit space for eventual link-up with a future Health Sciences central audio-visual production and distribution installation. Also, television origination will be possible within certain

laboratories and clinics.

The faculty of the School of Dentistry has recognized clearly the advantages of auto-tutorial and programmed learning. A special subcommittee on learning resources for the dental school studied the potential of such innovations. From this study, the architects have been asked to design study carrels for the multipurpose teaching laboratories, the specialty and multipurpose clinics, and the reading room. The carrels will be capable of providing information via films, tapes, slides, and programmed instruction; they will be self-contained with potential for cable connection to a central information storage facility. Cathode ray tube remote computer terminals will be installed so that information retrieval from the Bio-Medical Library and a central audio-visual facility will be feasible eventually. Currently, the dental school is using portable television equipment for monitoring and taping student performance with capabilities for instant replay of the tapes. This effective method of teaching will be expanded in the new dental school.

Proposed Audio-Visual Services for Other Construction Units

While this application requests funds for educational facilities just in construction Unit A, the total plans for expanded Health Sciences physical facilities are so interrelated and interdependent it seems essential to describe here to some extent the long range plans for audio-visual services in the other planned Health Science construction units.

It is anticipated that the existing still photography and motion picture production area in the Medical School will be expanded in its present or a new location and will serve as an audio-visual substation to provide some specialized needs of the Medical School. Classrooms to be remodeled will have improved systems for audio-visual projection and television viewing. A new 350 seating classroom for patient viewing and clinical teaching with 180° seating and a thrust stage will require specialized multi-slide projection, television receiving and origination, and special acoustic considerations.

When feasible, audio-visual facilities and services should be centralized to avoid duplication of space, hardware, and technical staff. However, because of the size, complexity, and specialized instructional needs of the Health Sciences some self-instructional and audio-visual production areas will be developed in several areas in the Health Sciences for convenience to the teaching areas such as the clinics and laboratories. Provisions will be made for television origination in hospital stations, clinics, laboratories, and other appropriate teaching areas. As will be true for dentistry in Unit A, other departments will develop a limited number of auto-tutorial, audio-visual study carrels (both WET and self-contained) close to their clinics and laboratories for convenience to the teaching activity and for experimentation.

Cathode ray tube (CRT) sending and receiving equipment will be installed in a number of the Health Science areas such as hospital nursing stations, laboratories, pharmacy, and admissions and out-patient medicine examing rooms, central scheduling, and seminar-conference alcoves.

While audio-visual substations and widely located audio-visual activities will be present in the Health Science Center, the planning for expanded physical facilities clearly recognized the necessity of having a centralized Health Science audio-visual production and storage facility related to and coordinated with the University's T.V. and audio-visual departments.

Long range plans for utilization of closed circuit television in the Health Science Center include consideration for a central production facility which would provide for - in addition to television - motion picture, graphics, and photographic production. Such a central installation would make available to the Health Sciences faculty production facilities and supporting personnel in all areas of instructional technology. In addition to production facilities, this central installation would be the hub of a distribution system in the Health Science Center. Electronic interconnection to classrooms, laboratories, hospital stations, seminar rooms, and clinics, departmental production areas, self-instructional carrels, and the Bio-Medical Library would be controlled from this central point. This will permit information to flow in all directions as needed.

The departmental audio-visual substations would be cable-connected to this central facility so that recordings could be made of materials originating in these locations and/or materials could be distributed to classrooms, seminar rooms, or carrels from such origination points. For other types of specialized recordings that would not require a permanent installation, portable equipment would be available from the central facility as required. Tapes made through the use of portable equipment could then be available for distribution through the system as needed.

Long range thinking also includes consideration of a T.V. interconnection with affiliated hospitals in the Twin City area. Such a communication system could be used for instructional, clinical, and research applications in the Health Sciences. It could also be extended to other health science centers in the region and could be a segment of any national system which might develop. The Health Science Center termination point would be in a central facility to provide for origination from any of the production areas in the Center for transmission to hospitals or for distribution of materials received from the hospitals to viewing rooms within the Center.

Cataloguing of recorded materials would be a function of the Library to integrate these materials with the whole range of instructional resources available to students and faculty. Electronic and other distribution equipment would be housed near the central production facility for greater efficiency and economy of operation. Stored materials, however, would be available in the Library by dial access through the distribution system and would be catalogued in the Library. Faculty would go to the production facility for assistance in planning and production of materials; students and faculty would go (either electronically or in person) to the Library for access to stored materials.

As reported in the section above on existing facilities, the Bio-Medical Library is developing an on-line transmission operation for distributing bibliographies and library materials to different receiving stations in the Health Sciences Center. We clearly expect this information transmission system to be well developed in our new Health Sciences facilities.

Computer-assisted instruction (CAI) will be included in this information transmission system. CAI permits a more sophisticated and flexible auto-tutorial capability. Larger quantities of information can be stored and retrieved more efficiently with this system than is possible with the more conventional tapes, slides, etc. Further, the student is able to "converse" with the computer and becomes an active participant in the learning process. The computer acts like a private teacher giving him immediate reinforcement for correct answers and appropriate responses to errors. Students are directed automatically to more challenging material or remedial instruction on the basis of their performance. Computers in education are able to monitor the original learning process and establish patterns of response indicating the perceptive learning style of the student.

At the present time, we have in our Health Sciences Center a Control Data Corporation 3300 computer with sufficient capacity and in the appropriate location to be used for CAI in our Health Sciences educational program. This computer is connected by cable to a CDC 6600 computer off campus to permit increased capacity for CAI in the Health Sciences if needed.

Faculty members in the Health Sciences are preparing themselves for participation in computer-assisted instruction. Some of the Medical School faculty are working now in CAI with the University's Department of Learning Behavior. The Medical School's new Department of Family Practice is developing a plan to utilize CAI in the training of family practice specialists. We expect to develop CAI programs within the Health Sciences Center and to use as appropriate programs available elsewhere. Also, if a national network is developed for CAI, we would want to tie our system into this network.

The new curriculum of the Medical School and other Health Science units are designed to utilize more self-instruction. This concept has evolved after numerous meetings, discussions, and consultations to consider the future direction of health science education. The chairman of the Education Resources Committee described the concept of new learning methods in a special report. Excerpts of the report are given below.

> For several decades there has been a revolution in the field of communications. We have developed numerous technological tools to store, retrieve, and transmit knowledge to students. Previously we had the printed page as the only information storage mode; however, along with the rapid increase in knowledge, the time and cost to produce books and the difficulty to change obsolete sections, other media for storing knowledge may supplant the book as the major learning vehicle. These new communications techniques allow us to stimulate the student through all his senses. The impact of these communication tools and their use in education are changing our concepts of the learning process and are providing us with educational research methods not previously envisioned.
>
> Students in primary and secondary schools and in colleges are being educated with a multi-media approach. They are not only using books and other printed materials but television, computers, computer-assisted instruction (CAI), programmed learning, video tape, tape recorders, motion pictures, photographic slides, single concept visual and aural tapes, independent study, self-pacing instructional methods with print and non-print materials and dial-access retrieval systems. These approaches have de-emphasized the use of the classic lecture to large groups. They have encouraged a dialogue technique in which the students with supervision become the informal teachers of small groups.
>
> The concept of a Learning Resource Center with its multi-media approach to learning involves a change in attitude towards facilitating the educational process. In a Learning Resource Center space is needed beyond the usual allotment for classrooms. These spaces are for (1) learning, (e.g., carrels), (2) production, origination, and support and (3) storage and retrieval.

A Learning Resource Center has a potential far beyond the confines of the University campus. It could function within what University of Minnesota President Malcolm Moos calls the "communiversity." All the affiliated hospitals in the Twin Cities and State can be an extension (satellite Health and Medical colleges) of a Health Sciences Learning Resource Center and its massive bank of teaching resources. The Learning Resource Center could be the base of the Postgraduate Health Science Education in all disciplines. It would be able to reach into the family doctor's local hospital, office and home, providing him with knowledge such as up-to-date drug information from our computers and the latest medical advances. The University of Minnesota Hospitals could provide teaching materials for every hospital in the State for the training of all types of hospital personnel. The Center could be used to carry on an educational health program for the general public.

With a commitment to a Learning Resource Center, the University could take full advantage of its faculty's teaching talents, could provide an optimum environment for student learning, and could extend all of the University's health resources through its Health Science graduates into the community for the benefit of each citizen. With such a Learning Resource Center we would continue to be an educational leader in making our Minnesota community The Learning Society.

Copy obtained from Medical Art and Photography -- handwritten notes apparently for their own use.

(10) — THURS — TMC

Jan — 12/11

Independent Study

)URCES CENTER NEEDS - 1973

5000

	Sq. ft.
dent ratio)	
)0 carrels 100% wet)	10,000
›ach area	200
ıd video playback	800
and materials (including library)	1,000
	~~12,000~~
	6500
l Materials Storage Area	
›	200
	300
first line maintenance	600
r, booker, technician	400
	1,500
	3,000
tography Production	
n-picture production and studio	3,000
	1,000
	1,000
	5,000
E. Service Training Area and First-Line Production	1,000
F. Television Production	
1. Production studios (2) and immediate support area	3,000
2. Master TV control (15 units simultaneous)	3,000
3. Support workshops and supplies	1,500
	7,500
G. Computer-Aided Instruction and Production	1,500
H. Duplication Center for Type Reproduction	2,000
I. Professional Technical Offices, Consultation and Meeting Rooms	
1. Television	2,000
2. Library (AV)	500
3. Health Science Art and Photography	1,800
4. Computers	700
	5,000

IN LIBRARY

reword the figure

SUBTOTAL (1973 needs) . . . . ~~38,500~~ 33,000

— Library Expansion

allotted — 33,000

II. Print Library Expansion Needs (additional space)

	1973	1986	Subtotal
A. Reading Rooms	7,300	9,600	16,900
B. Book stack	8,200	9,000	17,200
C. Staff areas	1,700	1,400	3,100
Subtotal	17,200	20,000	

TOTAL LIBRARY NEEDS 37,200

III. Total Needs for IRC

	1973	1986
A. (I) Non-Print (AV)	38,500	??*
B. (II) Print (Bio-Med Library)	17,200	20,000
TOTAL	55,700	75,700**

* Can't estimate at present because of rapid change in technology and changes in educational use of these technological tools.

** This figure includes the following:

IRC Non-Print Area	38,500
Bio-Med Library (Print) Area	37,200
Total	75,700 sq. ft.

THE ARCHITECTS COLLABORATIVE INC.

TAC

JEAN B. FLETCHER
1945 - 1965
NORMAN FLETCHER
WALTER GROPIUS
1945 - 1969
JOHN C. HARKNESS
SARAH P. HARKNESS
LOUIS A. McMILLEN

RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
ROLAND KLUVER
PETER W. MORTON
H. MORSE PAYNE, JR.

ERNEST L. BIRDSALL
TREASURER

14 August 1970

Mr. C. Thomas Smith, Jr.
Associate Director of Hospitals &
Health Sciences Planning Coordinator
University Hospitals
Minneapolis, Minnesota

Dear Tom:

Our meeting with the consultants from the National Medical Audio-Visual Center in Atlanta on August 7 pinpointed the need for a detailed review of the remaining shared classroom space to be planned in Unit B-C. Concern has previously been expressed by ourselves and others about the practicality of a 350 seat thrust-platform teaching auditorium. The consultants have not encountered a similar facility in any of the medical schools in this country. They did note some of the problems inherent in such an auditorium. These include:

1) Teaching with the speaker's back to part of the group.

2) Requirement for multiple projection of all types for optimal viewing of the entire group.

3) Expensive and complex maintenance and operation of multiple projection facilities.

These are problems we will deal with if you feel that the proposed auditorium can best accommodate the methods of teaching medical students in 1975.

A second issue which generated discussion and should be considered in reviewing the auditorium program is the kind of seating to be provided and the adequacy of the space allocation to house that seating. Our studies indicate that 14-16 SF/student is required for continental continuous table seating as opposed to 10-12 SF/student for tablet arm seating as planned in Unit 'A'. The University representatives in Atlanta preferred continental seating especially for a student response mechanism, but in order to achieve this, you will either have to reduce the capacity or increase the space allocation. At this point only a major structural, planning change could provide an effective increase in space.

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TELEPHONE: (617) UNIVERSITY 8-4200 CABLE: TACCAM CAMBRIDGE

Seating studies we have done indicate that we can, in the space provided in Unit 'A', accommodate ± 225 seats of the continuous type for the 350 seat capacity auditorium and 155 seats of continuous type for the 250 seat capacity auditoria.

We solicit your recommendations on these two vital issues at the earliest date. Design development on Unit B-C is proceeding and University input is necessary to avoid delays.

Yours very truly,

THE ARCHITECTS COLLABORATIVE Inc.

Kenneth Taylor

KT/kb

cc: Dr. Robert Mulhausen
Dr. Mellor Holland
Dr. Robert McCollister
Mr. Robert Turner

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

August 27, 1970

Mr. Tom Smith
Associate Director
Box 605

Dear Tom:

I am concerned about the large classroom in Building C. This is why I brought up the issue of the thrust-auditorium while we were at the Atlanta NM A/V Center. The questions are:

1. Who requested this kind of auditorium?
2. What programs are planned there?
3. Can the courses in the curriculum be educationally effective in that auditorium?
4. How does the Medical School's Phase A, B, and D programs relate to the room?
5. Will the other colleges of the Health Sciences be able to effectively use this auditorium? Each dean in the Health Sciences and their Educational Policy Committee chairmen must be contacted.

As you remember, I wanted the small 100-150 classroom to be used for patient demonstration. I cannot see how patients can be effectively demonstrated to 350 people.

With respect to the second question concerning the two types of seating. Doctor Holland's committee on classroom needs is the committee which must make this decision. They were responsible for determining the classroom needs. My committee on Educational Resources had no responsibility in this area. You should have Dean Holland's committee make this decision. It will affect all the courses in the Health Sciences.

Sincerely,

Ramon M. Fusaro, M.D., Ph.D.
Associate Professor

RMF:lw

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

UNIT C CLASS

Minutes of Meeting September 8, 1970

Present: Dr. Holland, Dr. Ebert, Dr. McCollister, Dr. Cavert, Dr. Mulhausen

The meeting was convened to discuss the Unit C classroom requirements. Dr. Ebert, Dr. Holland, Dr. Cavert and Dr. McCollister feel it is necessary to have two large classrooms in ABC complex.- 1 near basic sciences and 1 near clinic area - and that the clinic area classroom be built in amphitheater style for clinic teaching.

Dr. Mulhausen questioned the effectiveness and need of 350 seat auditorium of amphitheater construction.

Dr. Ebert feels this size and shape auditorium is needed for continuing clinical teaching on a large scale and should be used not for small scale demonstrations but rather for gross clinical teaching and dramatic effect.

A discussion of seminar spaces raised a question as to their adequacy, especially in support areas such as ante rooms, coffee and lounge area and coat room areas. Dr. Mulhausen questioned whether a trade of space from 350 seat auditorium for seminar space should be considered. Dr. Ebert feels that it is not possible to trade space from this area if future teaching needs are to be met.

A question of seating for the proposed auditorium was raised. Dr. Ebert feels seating in Unit C auditorium should be theater type and comfortable for effective clinical teaching. Continental seating was discussed, however it was generally felt that this type of seating was better for Unit A but not effective for clinical teaching.

In conclusion the need for a 350 seat auditorium was confirmed and a question again raised about the adequacy of the present square footage for the auditorium as well as to support areas, ante rooms, coat rooms, etc.

UNIVERSITY OF *Minnesota*

SCHOOL OF DENTISTRY · 136 OWRE HALL · MINNEAPOLIS, MINNESOTA 55455

Office of the Dean

September 8, 1970

Mr. C. Thomas Smith
B310 Mayo
University of Minnesota Hospitals

Dear Tom:

As I have reported to you personally, the faculty visiting the National Medical Audiovisual Center in Atlanta seemed to share a common concern about the classroom design in Unit A. The Atlanta people were not particularly complimentary about the planned facilities. We are probably stuck with classrooms which are exceedingly crowded and quite common. One problem is that the position of the mechanical shafts prevented TAC from designing larger rooms.

What direction do we take now? You did indicate in a letter that Dr. Fusaro and I should jointly sign approval for the rooms. We have not done that. What follow-up will occur from the Atlanta visit? Have the architects been directed to meet with any particular faculty group about the classrooms? Who is the architect in charge of designing these rooms? Any helpers? I agree with Dr. Mulhausen's consistent concern that space for classrooms does not even match the exceedingly limited space originally programmed. Any approval of the existing classroom design would have to be made simply as a concession so the building project wouldn't be held up. Approval could not be given that the existing plans were satisfying all of the major criteria initially set down.

Sincerely,

Mel

Mellor R. Holland
Assistant Dean for
Institutional and Student Affairs

cc: Ramon Fusaro
Robert McCollister
Robert Mulhausen

MRH:ajm

HEALTH SCIENCES CENTER

UNIVERSITY OF Minnesota

DEPARTMENT OF MEDICINE
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

September 8, 1970

Robert O. Mulhausen, M.D.
College of Medical Sciences
Box 293 - Mayo

Dear Bob:

I raised the question regarding the 350-seat clinical classroom in Building C with the members of the Council on Clinical Sciences of the Medical School at a meeting today. There was very strong feeling that such a clinical classroom should be included in the plans and that there was great need for such a facility. A resolution was proposed and passed unanimously supporting the inclusion of such a classroom in the construction.

Yours sincerely,

Richard V. Ebert, M.D.

RVE:nh

cc: Dr. M. R. Holland
Mr. Thomas Smith

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

Sept. 5, 1970

Dear Tom:

As you can see it is important to go through files just before you leave. I did send out requests for information regarding the thrust stage. I received replys from three schools - Nursing, Pharmacy and Public Health. The two most important schools, medicine and dentistry never answered.

I hope that this information is useful.

Ramer

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

THE ARCHITECTS COLLABORATIVE

TAC

JEAN B. FLETCHER
1945 - 1965
NORMAN FLETCHER
WALTER GROPIUS
1945 - 1969
JOHN C. HARKNESS
SARAH P. HARKNESS
LOUIS A. McMILLEN

RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
ROLAND KLUVER
PETER W. MORTON
H. MORSE PAYNE, JR.

ERNEST L. BIRDSALL
COMPTROLLER

Jan, 19

14 January 1970

Mr. C. Thomas Smith
Associate Director
Health Sciences Planning Coordinator
University Hospital
Minneapolis, Minnesota 55455

Re: University of Minnesota Health Sciences Expansion
TAC Job No. 68013

Dear Mr. Smith:

To aid in developing the programmed 350 seat thrust stage auditorium in Unit C, we would like the following information:

I. The following should be established to aid in determining the optimum and minimum lateral dimensions of the thrust stage.

A. We are assuming that rehearsals and practice demonstrations of surgical sessions will all take place in the surgery suite, and be transmitted to places of viewing through video.

B. It should be determined if the morbid anatomy demonstrations will all eminate from the anatomy suite, or if this audtiorium will be used to some extent for this.

C. The space requirements and any anticipated special uses should be reviewed with each of the clinical services that might use the auditorium. Medical art and photography should be questioned regarding their uses and special props.

D. The number of video cameras to be allowed for should be determined:

1. Two positions are recommended by us, in lieu of another requirement by the client.

2. Articulated arms for the cameras should be considered. The installation of a fixed overhead camera in the center of the room should be reviewed.

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TELEPHONE (617) UNIVERSITY 8-4200 CABLE: TACCAM CAMBRIDGE

II. The following must be established to enable 350 seats to have a satisfactory view of the thrust stage.

A. Within the confines of the structural and mechanical systems of Unit C we cannot both fit the programmed number of seats for a thrust stage arrangement, and at the same time provide one central point for a projected image that would be satisfactory for all of the seats. Therefore we would propose using a series of TV monitors in the auditorium, transmitting all images through these media. If comparative viewing is necessary, two monitors within sight range of each viewer will have to be provided.

III. It should be determined whether or not radiology demonstrations will take place in this auditorium.

A. We deem that a maximum of only 80 persons can adequately view an x-ray film from optimum positions. We would suggest, therefore, transmission of these film images through TV monitors. If the anticipated 1200 to 1600 line video transmission would not be satisfactory, another means of viewing the films must be sought.

Yours truly,

THE ARCHITECTS COLLABORATIVE, Inc.

William P. O'Leary

WPO'L/bb

cc: R. Turner
K. Taylor

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

March 25, 1970

TO:

FROM: Dr. Ramon M. Fusaro, Chairman, Learning Resource Center Planning Committee for the Health Sciences.

RE: Letter of 2/19/70; 350-seat thrust-stage auditorium.

I have not heard from you regarding Mr. William P. O'Leary's (TAC) inquiry about the needs for the thrust auditorium. I would appreciate a prompt reply.

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

U N I V E R S I T Y O F M I N N E S O T A

Memorandum

April 14, 1970

TO: Dr. Ramon M. Fusaro, Chairman of Learning Resource Center Planning Committee for the Health Sciences

FROM: Robert W. Schwanke, Assistant Professor and Assistant Director School of Public Health

SUBJECT: School of Public Health Use of Thrust Stage Proposed For Unit C

I have discussed the proposed thrust stage with a few of our faculty and find that the School of Public Health would make very little use, if any, of this facility. Our needs at the present time and probably more so for the future, indicate that this amount of money would be far better used in terms of equipping small classrooms and seminar rooms for auto-tutorial study. Although undoubtedly some of our lecture courses might be able to utilize the 350 seat room, the design of the room as well as the competing uses made by those who utilize the audiovisual equipment, would determine whether this was the best room for the School to use or whether to use some other for routine lecture purposes.

If the decision is made to go ahead with this special auditorium with its thrust stage, it would be my feeling from talking with a few faculty that the decision really should rest with other parts of the health sciences rather than with the School of Public Health which would make very little use of this highly specialized type of facility.

UNIVERSITY OF *Minnesota*

COLLEGE OF PHARMACY · 115 APPLEBY HALL
MINNEAPOLIS, MINNESOTA 55455

Office of the Dean

File with thesis returned

April 30, 1970

Dr. Ramon M. Fusaro, Chairman
Learning Resource Center Planning
Committee for the Health Sciences
Department of Dermatology
Mayo Memorial Building
University of Minnesota

Dear Dr. Fusaro:

At last all departments in our College have reviewed the needs for the thrust auditorium. One department, Clinical Pharmacy, indicated a need for this type of unit. Their statement follows:

> "The 350 seat thrust-stage auditorium would be most appropriate for the Clinical Therapeutics sequence which will be offered by clinicians from University Hospitals. Pharmacy students need a qualitative, rather than a quantitative introduction to disease and clinical therapeutics. Video tapes of planned presentations will supplement line presentations."

I do hope this information is what you desired.

Sincerely,

L. C. Weaver, Dean

LCW/vgl

UNIVERSITY OF Minnesota

SCHOOL OF NURSING · 125 OWRE HALL · MINNEAPOLIS, MINNESOTA 55455

March 9, 1970

To: Dr. Ramon M. Fusaro, Chairman
Learning Resource Center Planning Committee for the Health Sciences

From: Isabel Harris IH

Subject: Letter from TAC relative to the design of the large, 350 seat classroom

The simplest way to respond seems to follow the format of the letter from TAC. Under Roman Numeral I, A. would be fine for us. We have no morbid anatomy demonstrations and would assume that this question was intended for the Anatomy Department. C. does not apply to our department, I believe. In D, the number of video cameras to be allowed, under 1., this is difficult to respond to since we don't know what the positions are. However, perhaps it's not essential with zoom lenses. Under D., 2, the fixed overhead camera would be very desirable for us since we feel it would be useful in nursing demonstrations to have the overhead view. Under II, A, we have some concern about the size of the image one could get with television and the split screen effects. This same concern carries over into III, A.

IH:djf

Learning Res. Comm. 7

UNIVERSITY OF *Minnesota*

OFFICE OF THE VICE PRESIDENT, BUSINESS ADMINISTRATION
301 MORRILL HALL · MINNEAPOLIS, MINNESOTA 55455

September 16, 1970

TO:
Dr. Mellor Holland, Chairman
Dr. Richard Chilgren
Dr. Frank DiGangi
Dr. John Geier
Dr. Carl Heggestad
Mrs. Ruth Hovde
Mr. Gary Peterson
Dr. Barbara Redman
Mr. Robert Schwanke
Mr. Glen Brudvig
Mr. LeRoy Christenson
Mr. Martin Finch
Dr. Shelley Goldstein
Mrs. Elizabeth Grundner
Mr. Dennis Johnson

FROM: Hale Champion, Vice President for Planning, Operations and Investments

SUBJECT: CLASSROOM AND LEARNING RESOURCE COMMITTEE

Most of you have served on either the Teaching Space Committee under Dr. Holland or the Learning Resource Committee under Dr. Fusaro's chairmanship. In order to better coordinate the efforts of both groups, they are being merged into a single committee to deal with this very important area. Previous experience should enable the committee to move very quickly in dealing with the urgent task of Unit "A" teaching space approval and Unit "C" teaching space design.

Specific responsibilities of this committee shall include:

a. Review of programs projected for teaching spaces to assure relevancy to projected curricula developments. This will require coordination with each school's educational policy committee.

b. Development of criteria for use by the architects in designing seminar and classrooms, auditoria and support spaces, audio-visual control and or production spaces and the Learning Resource Center.

c. Critique and approval of designs in light of established criteria.

d. Assistance with other issues that may arise in this general area.

The individuals listed in the left hand column above have been designated by your respective deans and director as your school's representative. The persons listed on the right are being asked to participate as resource specialists to the committee. Your willingness to serve will be appreciated.

slt

UNIVERSITY OF *Minnesota*

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING · MINNEAPOLIS, MINNESOTA 55455

Sept. 21, 1970

Dr. Mellor Holland
Chairman
Classroom and Learning Resources Committee, Health Sciences
School of Dentistry
University of Minnesota

Dear Dr. Holland:

Prior to my leaving the University, I have gone through my files for the second time and found the "Position Paper" of the committee I chaired. The paper was written when the committee found out last May that the Planning committee had edited out the production facilities of the new Health Sciences Expansion Program. The paper was never sent; however, I now send it to you as it may be of some help in your planning and decisions.

The paper was the joint effort of the committee and addresses itself to the problems which the University and the Health Sciences must deal with inorder to develop an orderly growth of Educational Resources.

I am somewhat concerned over recent considerations to cut the 13,500 sq.ft. of the Learning Center in the library and put in production facilities in the same building. The learning center space is already cut to the barebone for the projected 5,000 students of the Health Sciences. In addition, production facilities are such that their environmental needs and function will conflict with those of the Learning Center. I realize we need production facilities but they should not come out of the student's learning space.

Please excuse my forwardness but I have strong convictions about the student's educational needs. I wish your committee well.

Sincerely yours,

Ramon M. Fusaro, MD, PhD
Associate Professor

Enc.

cc. Vice-president Hale Champion
Vice-president Lyle French

HEALTH SCIENCES CENTER
MEDICAL SCHOOL

UNIVERSITY OF Minnesota

DEPARTMENT OF DERMATOLOGY
MAYO MEMORIAL BUILDING • MINNEAPOLIS, MINNESOTA 55455

May 15, 1970

To: Members of Learning Resource Center Planning Committee

From: Ramon M. Fusaro, Chairman

Re: Position Paper

Please make any final additions or corrections on the enclosed draft of the Position Paper for our Committee so that we can forward it to Vice-President Champion. After reading it and adding your comments, send it back to me. (Box 288 Mayo)

The University of Minnesota is about to start a $100,000,000 Health Sciences expansion program as the beginning of an even larger building program (University, V.A. Hospitals, etc.). An important educational aspect of this first phase of construction is in jeopardy unless Unit L (the Learning Center and production facilities) is incorporated into the present construction to be completed by 1974-75. Our student enrollment will go from 3000 to over 5000 students. In the December 1968 issue of the University of Minnesota Alumni News, an article on Health Sciences expansion notes the development of new curriculums within the Schools (track programs) and the primary emphasis on "self-education and continuing education." The purpose of the Learning Center is to foster self-instructional techniques under faculty guidance and to teach students the learning modes they will use for the rest of their lives in their continuing health education.

The idea of the Learning Center is not new. It is a well established teaching function in primary and secondary education. The present new undergraduate students have been trained to use the multi-media approach to education. Medical and Dental schools across the country have Learning Centers functioning at the present time (Nebraska, San Diego, Virginia, Iowa, Michigan State, U.S.C., Houston, Connecticut, and Harvard). In the summer of 1968 the Committee for the Study of Physical Facilities for the Health Sciences excluded the Learning Center from the first phase of construction; however, our 1968 NIH grant (for matching construction funds) referred to the concept but did not specify any construction date. In the summer of 1969, HEW reviewed our grant and requested we improve the educational aspects of our construction to include a Learning Center. Because of HEW's request, Vice-President Smith reactivated the committee on Health Sciences Teaching Space Task Force on Instructional Resources. During the previous two years, this group developed the concept and proposed the Learning Center.

In April of 1968 a letter from President Moos called attention to the Health Sciences Committee on Educational Resources and its purpose to recommend procedures by which the educational methods in the Health Sciences may be improved. Vice-President Smith in a letter of June 1968 noted that the Health Sciences were not alone in the development of undergraduate Learning Centers as there were several on the main University campus. On January 20, 1970, Doctor Fusaro received a letter from Frank W. McKee, M.D., Director of the Division of Physician Manpower, stating "It is gratifying to know that the University of Minnesota plans to include a Learning Center in its 1973 Health Sciences' construction. I feel sure this pioneering step in medical education will be reflected in improved delivery of health services in the future."

Presently our faculty is using the techniques and producing the software to be used in the Learning Center. The Medical School along with the Biomedical Library is developing a pilot-Learning Center on the fourth level of the Library. The Medical School's Educational Policy Committee has adopted a new curriculum and endorsed the development of the present pilot-Learning Center for medical students. The University Library system has accepted this responsibility and is planning new positions to support the Center. The Biomedical Library Committee has endorsed the Learning Center for all Health Sciences students in order to have a facility to use the software being produced in numerous Health Colleges. The Medical School has received $40,000 within the last six months to purchase hardware and produce software for the Center. Because of lack of space in the Library, the Dental School has built and is operating a pilot-Learning Center on Oak and Washington over the Steak House Cafe. They have received funds to purchase hardware ($50,000) and hire staff for the Center. The Medical Technologists are using a small Learning Center in Powell Hall. The Schools of Nursing and Public Health are also

interested in using the pilot-Learning Center on the fourth level of Diehl Hall, but the facility is not adequate to handle even the present Medical School enrollment.

There is no central administration of educational resources in the Health Sciences; therefore, indiscriminate duplication of facilities and personnel appears to be the present modus operandi. There is no coordination or cooperation in the use of facilities, equipment and personnel. Even more important, students and staff must go to various locations in order to make use of the educational resources now available.

The National Library of Medicine (NLM) has reorganized and incorporated the National Audio-Visual Center under the Library. NLM is at present using a single catalog system for all print and non-print (slides, film, tapes, etc.) materials. They are attempting to catalog all software (teaching materials) being produced in Health Colleges. In addition NLM is establishing a National biomedical communication network to provide medical schools with a communication mechanism in order to use the library resources of NLM. Without the Learning Center and its production facilities, we will not be able to take full advantage of educational materials available through the NLM. Without the production facilities, we cannot modify available teaching materials for the faculty to use in their courses.

Two years ago President Moos appointed the Cashman Committee to make recommendations for the administration and orderly growth of educational resources. The essential points in that Committee's recommendations are:

1. A Coordinator for all University Educational Resources.
2. The Coordinator should complete an inventory of educational resources throughout the University.and to improve the service and assistance to the faculty.

3. The Coordinator should develop a coherent plan for the development of educational resources.
4. Establish a new Senate Committee on Educational Resources. Such a commitee would eliminate current overlap of functions and would serve as a policy-making body to develop necessary policies regarding the use of educational resources.
5. The Coordinator for Educational Resources would approve all budgets for educational resources by units of the University, regardless of the source of funds.
6. The Coordinator of Educational Resources should work toward the provision of an advisory service for faculty regarding the use of educational resources, either through units now working in the area or through a staff reporting to him.
7. The University should undertake a general program of educational innovation aimed at the more extensive use of educational resources by faculty to assist them in instruction, research and service.
8. The Committee is aware, however, of the need for careful planning and thoughtful new programs to provide a maximum effectiveness to faculty of the University.

The Health Sciences Instructional Resources Committee agrees with the philosophy and the objectives of the Cashman report. Realizing that President Moos is now implementing the guidelines of that report at the all-University level, the Committee has attempted to initiate the beginning of those objectives in the Health Sciences by improving our educational resources facilities. Our first objective is the establishment of a Learning Center and its supporting facilities in the new construction scheduled for completing in 1974-5. This Center is to meet the Curriculum needs of faculty and to provide a centrally-used structure which will displace the present dispersed inefficient

and wasteful facilities in the various colleges. In addition, the Committee has been trying to change its status from an ad hoc to permanent status in the Health Sciences in order to carry out the President's guidelines for the orderly growth of educational resources. This Committee feels that it is imperative that a Learning Center and its supportive facilities be included in the Health Sciences construction scheduled for completion by 1974-5.

THE ARCHITECTS COLLABORATIVE

AUDITORIA
17.0

22 September 1970

Mr. Melvin H. Fisher
Regional Engineer
ROFEC
Dept. of Health, Education and Welfare
Regional Office V
225 West Jackson Boulevard
Chicago, Illinois 60606

Re: University of Minnesota
Health Sciences Expansion
TAC Job No. 68013 Attn: Mr. Sal Canella

Dear Mr. Fisher:

This is to confirm our telephone conversation on 21 September 1970 regarding the provision of space for wheelchairs within each auditorium. We agreed that a satisfactory way of achieving this without loss to seating capacity would be to place movable seating in the last row of each auditorium. This seating could be used by either ambulatory or moved to accommodate non-ambulatory students as the need arises. The positions for wheel chairs can be reached without traversing ramps or steps.

Very truly yours,

THE ARCHITECTS COLLABORATIVE, Inc.

Kenneth Schwarz

KS/bb

cc: HSAE
C.T. Smith
Mel Holland

46 BRATTLE STREET, CAMBRIDGE, MASSACHUSETTS 02138
TELEPHONE (617) UNIVERSITY 8 4200 CABLE TACCAM CAMBRIDGE

LEARNING RESOURCE CENTER

September 22, 1970

OUTLINE OF TOPICS FOR DISCUSSION

I. Learning Resource Center Space

A. Carrels and learning areas (6000 + sq. ft.)

1. Dry carrels (about 180)
For using audio tapes, slides, film strips, and film cassettes. Material and headphones would be checked out at the central service desk.

2. Wet carrels (about 20)
For receiving playback from the central audio and video playback equipment. Receiving units could also be in carrels, seminar rooms, or classrooms located elsewhere in the health sciences complex.

3. Terminals for computer-aided instruction.

4. Special learning equipment or devices
Film viewers, self-testing devices, learning machines, etc.

B. Support areas (5300 sq. ft.)

1. Service desk and approach area (200 sq. ft.)
An attendent would be on duty to instruct and assist users, monitor use of the facility, check-out some types of material, etc. Some space needed for shelving and storage of materials.

2. Audio and video playback equipment (800 sq. ft.)

3. Audio-visual library (3000 sq ft.)

4. Preview and conference rooms (800 sq. ft.)
For faculty-student conferences, film previews, small group viewing of A.V. or video materials, student discussion groups, etc.

5. Office, workroom, and storage space (300 sq. ft.)
Office for L.R.C. supervisor, space for storing equipment not in use or which is available for replacing defective equipment, workroom space for staff to index and catalog material, label and mark material, etc.

II. Relationship of L.R.C. to other units.

A. Library
Provide staff and services 97+ hours/week, order materials available commercially or thru N.M.A.C., catalog materials based on N.L.M. cataloging information, co-ordinate L.R.C. services with the Library and with new emerging technology such as telefacsimile, computer operations, MEDLARS, and microfiche storage and retrival.

B. Faculty Advisory Committee
Faculty responsible for development of software, recommending purchases, up-dating materials, etc., with faculty advisory committee responsible for establishing policies for operation of the Center, and advising on equipment purchases and software development.

C. Audio-Visual Services
Responsible for maintaining the equipment in the Center, and advising on purchases, use, and operation of equipment. Also assist in co-ordination of L.R.C. services with A-V and television operations.

D. Medical Arts and Photography
Produce film, slides, filmstrips, and related materials, and advise on development and use of software.

E. Continuing Medical Education
Loans of materials to hospital libraries and health practioneers through Library extension service. Dial Access (brief audio tapes on current medical topics accessable through direct dial telephone service) could be incorporated into L.R.C.

III. Special problems

A. The role of print material in the L.R.C.

B. Electronic access to the audio and video playback facility from remote carrels, seminar rooms, or classrooms.

C. Interconnection of L.R.C. to the Library.

D. Administrative relationships.

UNIVERSITY OF *Minnesota*

COLLEGE OF PHARMACY · 115 APPLEBY HALL
MINNEAPOLIS, MINNESOTA 55455

Office of the Dean

September 23, 1970

Mr. C. Thomas Smith, Jr.
Associate Director
University of Minnesota Hospital
B 310 Mayo

Dear Tom:

We would like to keep committee involvement of our faculty to a minimum. Dr. DiGangi was on the Classroom Committee and Dr. Rippie on the Educational Resources Committee. Since these have now merged, it seems that we need have only one representative from our College. I am asking Dr. DiGangi to be our representative on the merged committee.

Could we arrange to have you and/or Hugh to make a progress report on the expansion program complete with slides. It would be very helpful to us.

Sincerely,

L. C. Weaver, Dean

LCW/hss

cc: Dr. DiGangi
Dr. Rippie

HEALTH SCIENCES CENTER

UNIVERSITY OF *Minnesota*

SCHOOL OF DENTISTRY • 136 OWRE HALL • MINNEAPOLIS, MINNESOTA 55455

Office of the Dean

DATE: September 24, 1970

TO:

John Geier, Chairman	Grace Mary Ederer
Glen Brudvig	Martin Finch
Richard Chilgren	Dennis Johnson
LeRoy Christenson	Barbara Redman
Frank DiGangi	Robert Schwarze

FROM: Mellor Holland, Chairman - Health Sciences Classroom and Learning Resource Committee M. Holland

SUBJECT: Appointment to Health Sciences Learning Resource Center Subcommittee

This is to request that you or a designated alternate or substitute serve on the Learning Resource Center subcommittee. Unless I hear to the contrary, I assume you will serve. Please provide the name of an alternate or substitute, if you wish to designate one.

Specific responsibilities of the subcommittee shall include:

1. Determine the appropriate subdividing of the 13,700 ft.^{2} of space allocated for the Health Sciences Learning Resource Center in Diehl Hall. Establish, for example, space needs for the information retrieval areas and their support facilities. Relay this information to TAC. <u>This assignment must be completed by October 7, 1970 at the latest</u>.

2. Establish the equipment needs for the retrieval areas and their support facilities including recommendations for equipment layouts.

3. Recommend needed interconnections of the L.R.C. with the library, central control room in Unit A, remote carrels, seminar rooms, classrooms, and other teaching areas the subcommittee considers essential.

4. Develop guidelines for production of software for the L.R.C.

5. Consider the appropriate administrative organization for the L.R.C. and teaching functions related to it.

Attached is a list of important topics relative to establishment of a L.R.C. as recommended by Mr. Glen Brudvig. Some of you already received a copy of this outline.

(Continued on second page.)

It is urgent that the L.R.C. subcommittee proceed immediately with the above assignment. The first meeting has been scheduled for 1:30-3:00 p.m. on Monday, September 28, 1970 in room 4112 Powell Hall. Please make every effort to attend or send a representative. The subcommittee should be prepared to make an initial report to the Classroom and Learning Resource Committee at its next meeting: September 30, 1970 from 2:00-4:00 p.m. in 4112 Powell Hall.

MRH:ajm

Enclosure

cc: C. Thomas Smith
Kenneth Taylor

LEARNING RESOURCE CENTER SPACE NEEDS

September 30, 1970

I. Learning Resource Center Space

A. Carrels and learning areas

Conduit should be sufficient throughout the carrel area to provide maximum flexibility in expanding or adding electrical or electronic connections to carrels and learning divices.

1. Carrels, 256 x 25 sq. ft. — 6400 sq. ft.

   For using audio tapes, slides, film strips, and film cassettes. About 10 07̸0 of the carrels should be equiped for receiving playback from the audio and video playback equipment. Receiving units could also be in carrels, seminar rooms, or classrooms located elsewhere in the health sciences complex.

2. Terminals for computer-aided instruction. — 500 sq. ft.

3. Other learning resources. — 1700 sq. ft.

   Space and tables for special learning equipment, use of print materials, study of models of various kinds, etc.

   a. Print materials (150 sq. ft.)

   b. Storage for models, etc. (150 sq. ft.)

   c. Study space for about 70 students (~~1400~~ 1300 sq. ft.)

SUB TOTAL ~~8600~~ 8500 sq. ft.

B. Support areas

1. Service desk and approach area. — 200 sq. ft.

   An attendent would be on duty to instruct and assist users, monitor use of the facility, check-out some types of material, etc. Some space needed for shelving and storage of materials.

2. Audio and video playback equipment. DIAL ACCESS — ~~800~~ 700 sq. ft.

3. Audio-visual library. — 1350 sq. ft.

   a. A-V Library (~~1000~~ 1150 sq. ft.)

   b. Film servicing, splicing, etc. (150 sq. ft.)

4. Office space 750 sq. ft.

a. L.R.C. supervisor (150 sq. ft.)

b. Secretary (150 sq. ft.)

c. Combination room for curriculum co-ordinators (450 sq. ft.) 150 ON ROOM 3@100

5. ~~Preview and conference rooms.~~ INTERACTION ROOM 800 sq. ft.

For faculty-student conferences, film previews, small group viewing of A.V. or video materials, student discussion groups, etc. Rooms should be connected to the central T.V. control area.

6. Technical support space 1600 ~~1200~~ sq. ft.

a. ~~Recording area (300 sq. ft.) + 200~~ CONTROL ROOM 150

b. Equipment storage ~~(250 sq. ft.) + 100~~ PREVIEW AREA 150

c. First-line repair ~~(250 sq. ft.) + 100~~ 150 } EQUIP STORAGE + REP 300

d. Office and work space. (400 sq. ft.)

E. preparation for Carrels 600 ft (AV prep area

SUB TOTAL ~~5100~~ 5200 sq. ft.

TOTAL 13,700 sq. ft.

MEMORANDUM

TO: Dr. Mellor Holland, Chairman - Shared Classroom and Learning Resources Committee

FROM: Bob Turner TAC

SUBJECT: Auditoria, Shared Classrooms and Seminar Rooms on Floors 1 and 2 - Approved Items

DATE: October 7, 1970

(350,250,200,100 and 50 Capacity Rooms)

1. General Configuration - Length, Width Etc.
2. Number and Configuration of Seating
3. Rear Projection Areas -- General Layout
4. Immediate Support Areas and Anterooms as Agreed in Discussions of 6 October 1970 and Noted on 1/8" Plans Dated October 6, 1970.
5. 30° Vertical Viewing Angle From Top of F.P. Screen to Eye of Person Seated in First Row
6. 45° Horizontal Viewing Angle From Center of F. P. Screen
7. Typical Arrangement of AV Equipment for Seminar Rooms as Noted on 1/8" Plans Dated October 6, 1970.
8. 50 Capacity Classrooms - Two To Have Flat Floors and Movable Seating (These To be Adjacent and Divided with Sliding Partition (Exact Sound Characteristics to be Determined)
9. 200, 100, and 50 Capacity Classrooms to be Provided with Electrical Elements to Accomodate Auto Lecterns - Similar to 350 and 250
10. Front Projection Booths (350 250 200 100) Approval Conditional on Satisfying AV and TV Needs. (Note: AV Needs Now Satisfied - TV Needs Not Yet Resolved)
11. Items Included in Dr. Holland's "Suggestions for Changes in Classrooms dated October 6, 1970" attached

The above items 1-11 have been approved October 7, 1970 by the following:

Carl B. Heggestad
Chairman, Health Sciences Classroom Subcommittee of the University of Minnesota

M. R. Holland
Mellor R. Holland
Chairman, Health Sciences Classroom and Learning Resources Committee of the University of Minnesota

U. OF MINN.
DATE: 10.14.70

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U. OF MINN.
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H. J. S. A.	
LERCH	
MAIN	
FLYNN	
C. D. M.	

CSH 10/7/70
MCH 10/7/70

Suggestions for Change in Classrooms

1. Need to enlarge CCTV control room (A1-210). Anteroom A1-209 should be part of A1-210. Eliminate wall. May need to take A1-204 also for A210. Mr. Brogger is concerned that space for control room is too small. AGREED TO TAKE BOTH

2. Anteroom A1-203 should not have a bed in it or that kind of use.

3. Reduce number of dressing cubicles. Need no more than 2 for classroom A and 1 each for classrooms B and C.

4. A1-214 on Floor 1 west plan should likely have access to hall to double as seminar room.

5. Classroom A 2-186 (classroom D) on Floor 2 west plan - should consider use of space in Southwest corner. Widen exit door on lower level. CHECK USE BY MECHANICAL

6. Door arrangement for auditoria. These doors are closely related. How do they work for ingress and egress?

7. Should corridors be widened on floor 1 between classrooms A, B, and C.

8. Question use of space South of classrooms A, B, and C on floor 2. Better use than sitting space? Coat space? Displays? Other?

9. Lecture room 2-186 (classroom D). Too much seat loss? Too many seats devoted to temporary seating and for wheelchairs. 4 or 5 seat spaces per room is plenty. 101-500 (12)

10. Check size of screens and blackboards in small classrooms. (50) CHECK MC

11. Recommend that 3 classrooms for 50 people (A2-171; A2-172; and A2-173) be designed as follows: 1 kept essentially as is and 2 designed with flat floors for movable seats.

12. Suggest keeping classroom E as is unless space sufficient to allow movable seats with tables with seating capacity close to 100. One consideration could be to eliminate projection booth to provide more classroom space.

13. Strongly recommend thorough checking on blackboard types and blackboard lighting before any decision made as to white or black boards and the type of lighting. more info on Bds

14. Check carefully on width of projection booths so they can accomodate equipment needed including TV cameras. Also, check on how this affects coat space.

15. A1-215 anteroom off classroom D would likely be neded for storage of beds, T.V. stands etc. If so, what about access from this room to classroom i.e. for movement of large equipment?

16. Shouldn't there be a system to close off the coat areas from the classrooms i.e. A2-165 by classroom C and A2-155 by classroom B.

17. Would favor having rear projection system optimal even if space behind for technicians is limited. Or what about moving wall out at that point?

18. Was the correction made to projection booth doors to the middle of each room?

OCT 13

M. Holland
October 6, 1970

MAJOR ITEMS YET TO BE RESOLVED: (OCTOBER 12 TARGET)

1. Design of Master Control Area (Except for Equipment)
2. Type and Location of TV Cameras - Storage and Recording Locations
3. B&W or Color Monitors or Video Projectors for ~~(350-250-200)~~ AUDITORIA, SHARED CLASSROOMS & SEMINAR ROOMS
4. Lighting For TV
5. Determination of Specific Audio Systems for Classrooms and Seminar Rooms and Interconnections. Includes such Items as PA, Intercom, Telephone, Computer Ties, Student Response
6. Total TV Requirements For Phase I (Questionnaire Now Being Distributed to Health Sciences Units)
7. Exact Ceiling Configurations in Auditoria and Classrooms

C Bryant 10/7/70

M R Holland 10/7/70

Above items recognized with the understanding that additional unresolved items would be identified as planning continues.

MRH
CEB

LEARNING RESOURCES SUBCOMMITTEE

Minutes for the meeting of October 7, 1970

Present: Mr. Bradley, Mr. Brudvig, Dr. Chilgren, Mr. Christenson, Dr. DiGangi, Miss Ederer, Mr. Finch, Dr. Holland, Dr. Redman, Mr. Taylor, Mr. Schwanke.

SPACE:

With regard to the space available for the Learning Resource Center in Diehl Hall, the following topics were discussed:

1. Square footage included in Phase I program: As the Learning Resources Program now stands, it will be necessary to accommodate some 13,700 net sq. ft. into 16,000 gross sq. ft. of space. There is no square footage included in Phase I for the Biomedical Library expansion.

2. Possibilities for handling 14" drop in floor level along the Diehl Hall periphery. These included installation of a computer deck in the floor area. Clear ceiling height is a problem.

3. Need for developing an emergency buzzer and light system that would interrupt taped materials which students might be using.

CARRELLS

1. Location - Student carrells should not be located in rows along a corridor.

2. Seating - Fixed for one person per carrell. It is felt that in the study carrells the student will be relating primarily to the material being presented. Carrells will be open to the back, however, and have potential for side communication with adjoining carrells so that material can be discussed among students. A slide-out board will be installed at each desk to accommodate students wishing to utilize hard copy materials along with tapes and slides. This hard copy material should be available to the student in a reserve section of the Learning Resources area.

3. Size of carrells agreed as 43 ½" deep by 49" wide with three sides open at back. Carrells planned by Tufts take up no less than 27 square feet. A five foot desk is being proposed.

4. Usage - Carrells would not be used for required materials. Each department has agreed to present some usage estimate with regard to this area.

5. Portable Carrells - A form of portable carrell was anticipated for future wide spread use, replacing in time, some of the lecture programs for students. In view of the fact that with a portable carrell much of student's

learning can be done at home, it is felt that perhaps more than 10% of Learning Resources carrells should be sophisticatedly equipped and extra money might be requested in order to provide this. As things stand, conduits will be installed for all carrells for future conversion to more sophisticated systems.

FUNDS

Possibilities of getting funds for library expansion through Health Manpower grants were discussed.

CONTROL

Location of control stations were discussed for checking materials in and out of the Learning resources area.

UNIVERSITY OF *Minnesota*

SCHOOL OF DENTISTRY · 136 OWRE HALL · MINNEAPOLIS, MINNESOTA 55455

Office of the Dean

October 12, 1970

Mr. C. T. Smith
Associate Director
B310 Mayo
University Hospital

U. OF MINN.
DATE: 10/27/70

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Dear Tom:

Enclosed is a document indicating approval of a number of design items related to the classrooms in Unit A. You will note that Carl Heggestad and I signed the memorandum. The document is looser than I preferred and did not specifically accompany the plans. However, TAC was eager to get a go ahead on these design items so Carl and I approved them in this way. The design document and attachment were put together rather quickly by Bob Turner during his visit here this past week. One attachment with this letter was merely a list of suggested changes I brought to the classroom meeting October 6.

I believe the Classroom and Learning Resources Committee has made excellent progress since we began our work September 17. The people in the committee have been magnificent. Here is the status of the planning as I see it.

1. Classroom design for Unit A approved generally. Some details to work out particularly in the support areas.
2. Learning Resource Center space allocations worked out well. Subcommittee seemed very much in agreement on the allocations. We were able to include some production space for preparing teaching materials directly related to the carrels. TAC has made one design on our program and space recommendations. Subcommittee has reacted to this. New design will be made for application. Equipment lists are being prepared.
3. A-V equipment needs for the classrooms are being worked out. Utilization of the equipment is being studied further. Difficulties regarding this are being solved. A major problem is the low amount of dollars allocated for A-V equipment. I cannot get a handle on how this equipment cost list was worked out. You do know that the Teaching Committee I chaired had been dismissed well before the Unit A application was submitted. The best I can learn is that $115,000 was allocated for A-V equipment for the shared classrooms in Unit A. Then TAC subtracted $106,000 from this amount because of the space created for the control room. Dr. Carl Heggestad has challenged that figure several times but gets no response. Perhaps part of the $106,000 was for the storage spaces. If so it isn't

HEALTH SCIENCES CENTER

U. OF MINN. DATE: X O

H.G.S.P.	P.P.&D.	H.S.-COOD.	H.S.A.E.	H.J.S.A.	LERCH	MAIN	FLYNN	C.D.M.			

proper to take that out of teaching equipment. Some of the storage was for dentistry but was space we had programmed so I don't see how dentistry could be charged. The remaining space is called building storage. Again it isn't proper to develop this space at the expense of teaching equipment. All the space created under the classrooms is most valuable so we are glad we have it. However, perhaps a more equitable cost sharing could be figured.

4. Progress is being made on the design of the Unit C classroom. It's a compromise - a point I have thought was possible. One major concession was to agree to reducing the seating from 350 to 325 so TAC could design the room properly. I think University people connected with the planning should be cognizant of the limited space devoted to these classrooms. They are very crowded. TAC'S building system simply did not permit the designing of proper sized classrooms. Our approval of the size was done only because there was no other choice - not that we thought the large classrooms were of sufficient size.
5. Resolving some of the many TV problems has been slow. A survey of anticipated TV use in the Health Sciences is being conducted. Questionnaire forms have been distributed. Finalizing this will take time. We are working at solving the immediate problems - design of control room and T.V. equipment needs in Unit A. I met October 9 with Sheldon Goldstein. It looks as though we can get most of the immediately needed information settled by the end of this week. People are so darn busy that they just can't spend the time needed. The KUOM people are working on many other projects and are short handed.
6. I have made virtually no progress on the communications study. I have sought names of consultants but haven't learned much.
7. As per our discussion a few days ago, I have proceeded to launch a study of the computer needs for Unit A and other health science areas as seems appropriate to the planning. Bob Schwanke has agreed to chair this subcommittee and has already moved on this. I would like to ask for a letter from you to me specifically charging our committee with this responsibility. As I visit with people about this, it seems apparent that there are multiple and long standing problems connected with developing any widespread organized data processing system. I would like to suggest that your letter refer to the following:
    1. Determine that there will be an appropriate system in Unit A for computer connection throughout the building to serve teaching, research, and administrative areas.
    2. Be certain that building A design permits computer connections to outside facilities in the Health Science complex and computers away from the campus!
    3. Establish anticipated use of data processing in Unit A, B, C and the Learning Resource Center in Diehl Hall - particularly for the purpose of determining design of these facilities. Make appropriate recommendations for computer connections among these units and to outside facilities.

You may wish to add to these items or revise them. My thought is that the subcommittee should have a limited assignment - to help the current planning. I do not think an attempt should be made to conduct an in-depth Health Sciences-wide computer study. Also, the Subcommittee should make proper contact with the Division of Health Computer Sciences.

After receiving your letter I will proceed to formally name a subcommittee with Bob Schwanke as chairman. My plan is to appoint a small subcommittee. The subcommittee will be urged to consult with resource people. As mentioned above, some work is already going forward on this. Yesterday Kathleen Keenan gave me a statement from the Division of Health Computer Sciences which indicated that a comprehensive computer plan is underway. How does this relate to our planning? A copy of the statement is attached.

I trust the above report is helpful.

Sincerely,

Mel

Mellor R. Holland
Chairman
Health Sciences Classroom and
Learning Resources Committee

MRH:mjt

1970

Dr. Holland

SYSTEMS ACTIVITY

The Division of Health Computer Sciences has recently been repartitioned administratively, into the following five sections.

A. Systems Development and Maintenance
B. Health Sciences Computer Center
C. Health Computer Sciences Research
D. Training and Instruction
E. Medical Ecology Information

In line with this reorganization, detailed discussions have been held with regard to the missions of the section on Systems Development and Maintenance. A summary follows.

Organization and Function

The responsibilities of this section include the following;

1. Systems programming and maintenance on all computer systems within DHCS.
2. Coordinating computer evolution within the Health Sciences.
3. Coordinating system development with UCC.
4. Advising users about new developments.

The section currently includes the following individuals:

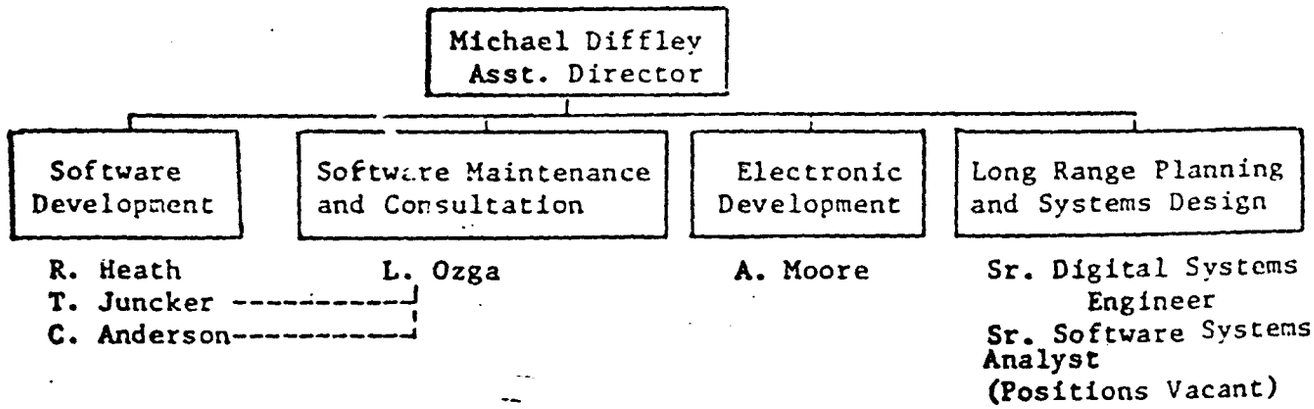
Michael Diffley, Assistant Director
Richard Heath
Gertrude Juncker
Alan Moore
Charles Anderson
Larry Ozga

This come today.
Sounds encouraging!

K. Keenan
10-8-70

Occassionally other DHCS staff members participate in development projects coordinated by the section. For example, Rich Schroedel is currently working on PDP-12 software.

The section is currently being reorganized because of increased staff and responsibilities. The current organization plan is shown below.



MEMORANDUM

TO: Dr. Mellor Holland, Chairman - Shared Classroom and Learning Resources Committee

FROM: Bob Turner TAC

SUBJECT: Auditoria, Shared Classrooms and Seminar Rooms on Floors 1 and 2 - Approved Items

DATE: October 7, 1970

(350,250,200,100 and 50 Capacity Rooms)

1. General Configuration - Length, Width Etc.
2. Number and Configuration of Seating
3. Rear Projection Areas - General Layout
4. Immediate Support Areas and Anterooms as Agreed in Discussions of 6 October 1970 and Noted on 1/8" Plans Dated October 6, 1970.
5. 30° Vertical Viewing Angle From Top of F.P. Screen to Eye of Person Seated in First Row
6. 45° Horizontal Viewing Angle From Center of F. P. Screen
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8. 50 Capacity Classrooms - Two To Have Flat Floors and Movable Seating (These To be Adjacent and Divided with Sliding Partition (Exact Sound Characteristics to be Determined)
9. 200, 100, and 50 Capacity Classrooms to be Provided with Electrical Elements to Accomodate Auto Lecterns - Similar to 350 and 250
10. Front Projection Booths (350 250 200 100) Approval Conditional on Satisfying AV and TV Needs. (Note: AV Needs Now Satisfied - TV Needs Not Yet Resolved)
11. Items Included in Dr. Holland's "Suggestions for Changes in Classrooms dated October 6, 1970" attached

The above items 1-11 have been approved October 7, 1970 by the following:

Carl B. Heggestad
Chairman, Health Sciences Classroom Subcommittee of the University of Minnesota

M. R. Holland
Mellor R. Holland
Chairman, Health Sciences Classroom and Learning Resources Committee of the University of Minnesota

MAJOR ITEMS YET TO BE RESOLVED: (OCTOBER 12 TARGET)

1. Design of Master Control Area (Except for Equipment)
2. Type and Location of TV Cameras - Storage and Recording Locations
3. B&W or Color Monitors or Video Projectors for ~~(350-250-200)~~ 100 AUDITORIA, SHARED CLASSROOMS & SEMINAR ROOMS
4. Lighting For TV
5. Determination of Specific Audio Systems for Classrooms and Seminar Rooms and Interconnections. Includes such Items as PA, Intercom, Telephone, Computer Ties, Student Response
6. Total TV Requirements For Phase I (Questionnaire Now Being Distributed to Health Sciences Units)
7. Exact Ceiling Configurations in Auditoria and Classrooms

C Stoppert 10/7/70

M R Holland 10/7/70

Above items recognized with the understanding that additional unresolved items need be identified as planning continues.

MRH
CES

BGH 10/7/70
MRH 10/7/70

Suggestions for Change in Classrooms

1. Need to enlarge CCTV control room (A1-210). Anteroom A1-209 should be part of A1-210. Eliminate wall. May need to take A1-204 also for A210. Mr. Brogger is concerned that space for control room is too small. AGREED TO TAKE BOTH
2. Anteroom A1-203 should not have a bed in it or that kind of use.
3. Reduce number of dressing cubicles. Need no more than 2 for classroom A and 1 each for classrooms B and C.
4. A1-214 on Floor 1 west plan should likely have access to hall to double as seminar room.
5. Classroom A 2-186 (classroom D) on Floor 2 west plan - should consider use of space in Southwest corner. Widen exit door on lower level. CHECK USE BY MECHANICAL
6. Door arrangement for auditoria. These doors are closely related. How do they work for ingress and egress?
7. Should corridors be widened on floor 1 between classrooms A, B, and C.
8. Question use of space South of classrooms A, B, and C on floor 2. Better use than sitting space? Coat space? Displays? Other?
9. Lecture room 2-186 (classroom D). Too much seat loss? Too many seats devoted to temporary seating and for wheelchairs. 4 or 5 seat spaces per room is plenty. 401-500 (12)
10. Check size of screens and blackboards in small classrooms. (50) CHECK MEL
11. Recommend that 3 classrooms for 50 people (A2-171; A2-172; and A2-173) be designed as follows: 1 kept essentially as is and 2 designed with flat floors for movable seats.
12. Suggest keeping classroom E as is unless space sufficient to allow movable seats with tables with seating capacity close to 100. One consideration could be to eliminate projection booth to provide more classroom space.
13. Strongly recommend thorough checking on blackboard types and blackboard lighting before any decision made as to white or black boards and the type of lighting. more info needed Bd T
14. Check carefully on width of projection booths so they can accomodate equipment needed including TV cameras. Also, check on how this affects coat space.
15. A1-215 anteroom off classroom D would likely be neded for storage of beds, T.V. stands etc. If so, what about access from this room to classroom i.e. for movement of large equipment?
16. Shouldn't there be a system to close off the coat areas from the classrooms i.e. A2-165 by classroom C and A2-155 by classroom B.
17. Would favor having rear projection system optimal even if space behind for technicians is limited. Or what about moving wall out at that point?
18. Was the correction made to projection booth doors to the middle of each room?

NXT. MTG. OCT 13,

M. Holland
October 6, 1970

Mr. Maupin

UNIVERSITY OF *Minnesota*

SCHOOL OF DENTISTRY · 136 OWRE HALL · MINNEAPOLIS, MINNESOTA 55455

Office of the Dean

TO: Members of the Health Sciences
Learning Resources Committee

FROM: M. Holland Mel

DATE: February 11, 1972

As per our recent discussion and meeting with Peter Roll from Vice President Shepherd's office, it is necessary for us to prepare a list of educational development programs and special learning resources in the Health Sciences. Dr. Roll has asked for a first draft of the list by February 21. A meeting of the committee has been scheduled for Friday, February 18, at 10:00 a.m. in 4112 Powell. Please try, if you can, to collect the appropriate information from your area before we meet on Friday. If you aren't able to attend the meeting, send the material to my office before the meeting.

I will then collate the information and prepare a preliminary all-Health Sciences report for Dr. Roll. Then the committee can review the total list and revise it and add to it for the final report.

As you know, it was a little unclear as to what we should include under the two categories. Under educational development, it would seem appropriate to include any special educational effort which is innovative, unique etc. Special teaching projects, major curricular changes, self-learning projects, etc. seem to me as likely items to include. If you are in doubt about a project or special effort, include it.

The learning resources category seems a little more definite. I suggest you include learning resources using special media or techniques: television, slide collections, autotutorial carrels, programmed learning with audiovisual aids, etc.

No doubt I have left out some good examples but the above should give you some guidelines. While this task seems time consuming and perhaps arduous we should be able to pull together some useful information for us and for Dr. Shepherd's office. It will give his office good evidence of the considerable use of learning resources in the Health Sciences, the need to coordinate their efforts, and substantiation for the grant request.

Thank you for your willingness to serve on the Health Sciences Learning Resources Committee and participating in this current data collecting effort.

MRH:ajm