university of minnesota
office of physical planning

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recreational sports facilities

twin cities campus

RECREATIONAL SPORTS FACILITIES-MINNEAPOLIS AND ST. PAUL

FACILITIES PROGRAM

JANUARY 1984

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University of Minnesota-Minneapolis and St. Paul Campus

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I. INTRODUCTION

HISTORICAL AND GENERAL BACKGROUND

The School of Physical Education and Recreation offers a wide range of activity courses for credit to the general student population as well as physical education majors. Until the 1960's there were separate Physical Education Departments for women and men.

Extracurricular recreational activities developed to the extent that they were defined, structured, and provided a staff person in the 1930's. The women's activities were primarily extramural sports and men's activities primarily intramural sports. By the 1960's co-recreational intramural sports were included in the "men's" program.

Sports Clubs, orgainized around a particular sport, also developed.

In the early 1970's, all recreational sports programs were brought together within the combined School of Physical Education and then transferred administratively to the Office for Student Affairs.

In 1983 a Recreational Sports Board of Governors representing the University students, faculty and staff was formed to develop and recommend policy within which the Office of Recreational Sports and Sport Clubs programs operate. Sport Clubs are coordinated by a council of representatives from the clubs.

The Board of Regents, upon recommendations from the Student Services Fees Committee Minnesota Student Association Forum, and the University Administration, authorized collection of mandatory fees for planning construction and remodeling of Recreational Sports facilities. Fees for this purpose have been added to the user charges made to faculty, staff, and non-student Sport Clubs' participants. Seven million dollars will be funded from these sources.

Legislative funding of $10 million for Recreational Sports facilities was requested from Legislature. Planning funds in the amount of $210,000 and anticipating state funding not to exceed $10 million for Recreational Sports facilities have been authorized.

The legislature has required that plans include "an assessment of the availability of recreational sports facilities in parks and schools which are physically close to the Minneapolis and St. Paul campuses."

It is the intent of the University to develop a scheduling plan so the facilities serve Recreational Sports programs on an priority basis to meet needs of program constituents and also serve to meet space needs for School of Physical Education activity courses.

CURRENT STATUS

A Recreational Sports Facilities Study was completed in October 1977 by an Ad Hoc Committee on Recreational Sports.

A sub-committee of the Ad Hoc Recreational Sports Facilities Committee was appointed by Vice President Brunning to make recommendations for space needs of the Twin Cities Campus Recreational Sports Centers. The sub-committee members were Holger Christiansen, Alan Stull, C.E. Mueller, Bruce Anderson, and Jennifer Sue Larson-Oatey, from the Recreational Sports staff, all of whom have expertise serving as facilities consultants for other educational institutions.

As part of their study, an inventory of current facilities was conducted. The table below is an inventory of the indoor recreational sports facilities on the University of Minnesota Twin Cities Campus. The evaluation not only gives the type of facility by building location, but differentiates between facilities that are "adequate" and those that are "substandard" as determined through on-site inspection; "adequate" being those useable in their present state, i.e. of regulation size, etc. "Substandard" are those facilities that, while useable, are deficient in some way, e.g. non-regulation, poorly lighted, etc. Approximately 80% of the indoor facilities are substandard.

UNIVERSITY OF MINNESOTA
INDOOR FACILITIES - TOTAL AND SUBSTANDARD

	ARMORY			BIERMAN			COOKE HALL			FIELDHOUSE			MEMORIAL STADIUM			NORRIS			ST. PAUL GYM			WILLIAMS ARENA			TOTALS		
	Std.	Sub	Total	Std.	Sub	Total	Std.	Sub	Total	Std.	Sub	Total	Std.	Sub	Total	Std.	Sub	Total	Std.	Sub	Total	Std.	Sub	Total	Std.	Sub	Total
Archery										0	1	1				1	0	1	0	1	1				1	2	3
Badminton							4	0	4							0	11	11	2	1	3				6	12	18
Basketball	0	1	1	2	0	2	0	3	3	0	3	3				0	2	2	0	2	2	1	0	1	3	11	14
Boxing													0	1	1										0	1	1
Dance Studio																1	0	1							1	0	1
Diving							0	1	1																0	1	1
Fencing													0	1	1										0	1	1
Golf													1	0	10	0	1	1	0	1	1				1	2	3
Gymnastics							2	0	2																2	0	2
Handball, Racquetball, Paddleball													0	10	10				0	3	3				0	13	13
Ice Hockey																						1	0	1	1	0	1
Jogging										0	1	1							1	0	1				1	1	2
Judo-Karate	0	1	1																						0	1	1
Sauna	1	0	1	2	0	2										2	0	2							5	0	5
Shuffleboard													0	1	1				0	2	2				0	3	3
Squash													0	8	8	0	1	1							0	9	9
Swimming							1	1	2							0	2	2	0	1	1				1	4	5
Table Tennis							0	2	2				0	2	2	0	2	2	0	1	1				0	5	5
Tennis	3	0	3				0	2	2							0	1	1							3	3	6
Track-Indoor										0	1	1													0	1	1
Volleyball	0	2	2	3	0	3	0	4	4							0	6	6	0	2	2				3	14	17
Wt. Lifting				1	0	1							0	1	1				0	1	1				1	2	3
Wrestling													0	1	1										0	1	1
																						Totals			28	87	125

figure 4

These deficiencies were analyzed in relation to facilities needed to support programs of the Office of Recreational Sports, School of Physical Education, Women's and Men's Intercollegiate Athletics by another Ad Hoc Committee in 1979 which recommended immediate action on a legislative request. Such a request was approved by the Board of Regents upon recommendation from the administration.

That request included the following analysis:

> The existing usable space for indoor Recreational Sports activities at the University of Minnesota totals 476,900 square feet (including space that is considered substandard - 80%). This space also includes Williams Arena (141,000 square feet) which is available for only limited use. Therefore, a more appropriate figure of usable space is 335,900 square feet. (Including 80% substandard space).
>
> The nationally recognized reference book University Space Planning: Translating the Educational Programs of a University into Physical Facility Requirements presents a systematic methodology of deriving space requirements for a University (i.e., the "Numberic Method"). Applying these standards to the University of Minnesota, the University should have 566,032 net assignable square feet. By substracting the 335,900 net assignable square feet from the standard, the University is currently deficient by 230,132 square feet and 184,105 square feet should be brought up to standard.

II. academic brief

II. ACADEMIC BRIEF

RECREATIONAL SPORTS

The primary purpose of the Recreational Sports program is to provide each student, faculty and staff member of all skill levels, physical capabilities, past experiences, ages, and genders with an opportunity to participate in a wide variety of sports experiences. These experiences may contribute to satisfaction of interests in fitness, exercise, association, and competition.

There are four basic components of the University of Minnesota's Recreational Sports Program which are designed to provide varying degrees of competitive, non-competitive, structured and unstructured activities for participants: Intramurals, Sports Clubs, Fitness, Open Recreation.

1. Intramurals

   Intramurals, the largest division of Rec Sports, provides competitive opportunities in 20 different sports for people of all skill levels. Leagues and tournaments are organized for men, women and co-rec (co-ed teams) competition into different All-University classes (A, B, C) according to participant choice and level of ability. Participants may enter as a team, or as individuals who wish to be placed on a pick-up team. The major IM sports are: softball, touch-football, volleyball, basketball and soccer.

2. Sports Clubs

   Sports Clubs are joined by individuals who share a common interest in a particular competitive or non-competitive activity. Nearly 50 different sports clubs provided opportunities for students, faculty and staff to participate in a variety of activities. Sports Clubs, which are self-administered and largely self-supporting, enable participants to sharpen basic skills and provide high-level extramural competition.

3. Fitness

   This program provides participants with opportunities for self-directed, individually designed recreation, along with a wide variety of activities, including the very popular aerobic dance, action aerobics and aerobic workout. Or a participant may sign up for one of several pre-designed fitness programs which are completed on their own time at their own pace.

   Clinics on various sports skills, fitness and training are held periodically during the year.

4. Open Recreation

   Gymnasiums, pools, weight rooms, and other activity areas are available for open recreation when not used by Physical Education classes, athletic team practices or other scheduled activities. Schedules are posted in each activity area. Pool schedules are available at all Rec Sports offices or the Pool Update Line.

Approximately 35,000 students, staff, and faculty participate in these programs each year. The participation level has tripled in the last decade. With increased interest in fitness, increased involvement of women in sports, and increased attractiveness of facilities; the participation level is expected to expand even more.

Office of Recreational Sports staffing includes two administrators, seven F.T.E. Program staff, eight clerical staff (accounting and office), and one F.T.E. administrative staff.

SCHOOL OF PHYSICAL EDUCATION

Like any other academic unit at the University of Minnesota, the Schoool of Physical Education, Recreation, and School of Health Education is committed to three basic purposes:

- disciplined inquiry, i.e. scholarly and creative productivity
- teaching
- professional service

Specifically, the purposes of the school are to advance and disseminate knowledge in three subject areas, educate professional personnel in their respective disciplines, and provide leadership in the three fields.

The School's instructional responsibilities in the University include:

- graduate education (with a strong emphasis on research)
- undergraduate professional preparation
- an all-University Physical Activity Program
- Continuing Education and Extension

Most of the instructional program in basic motor skills is offered through the Physical Activity Program although some are also included through Continuing Education and Extension, A wide range of activity courses (service courses) are offered through the Physical Activity Program for the general student population as well as undergraduate physical education majors. Activities offered during the 1978-79 academic year included: cycling, swimming, springboard diving, synchronized swimming, life saving, water safety instruction, SCUBA diving, conditioning, weight training, folk and square dance, ethnic dance, ballroom dance, ballet, disco, modern dance, badminton, fencing, judo, karate, handball, paddleball-racquetball, tennis, golf, track and field, lacrosse, soccer, softball, vollebyall, angling, horsemanship, gymnastics, tumbling, trampoline, bowling, archery, riflemarksmanship, ice skating, ice hockey, curling, Nordic skiing, wrestling, basketball, baseball, football, and field hockey. In many of the preceeding activities, two (beginning and intermediate) or three (beginning, intermediate, and advanced) levels of instruction were offered.

In terms of the number of students served, the Physical Activity Program has shown considerable growth in recent years. A decade ago, 5,732 students were registered for classes in the program compared to 7,796 in 1982-83, an increase of 36%. This increase has been accomplished primarily by increasing class size rather than scheduling additional sections. Even so, the demand for registration cannot be fully met.

III. facility requirements

III. FACILITY REQUIREMENTS

A. MINNEAPOLIS - SPACE TABULATION

Main Entrance Foyer	Not determined
Gymnasium I	20,680
Auxiliary Gymnasium	10,340
Gymnasium Storage Room	2,200
Recreational Swimming Pool	5,725
Racquetball Courts	16,000
Squash Racquet Courts	2,385
Weight Room	5,500
General Exercise Room	1,500
Multipurpose Mat Room	1,600
Reception/Administration Office	800
Sport Club Office	600
Meeting Room	375
Locker Equipment & Sales Room	600
Locker Rooms	10,000
Shower/Drying Rooms	1,400
Saunas/Steam Room	400
TOTAL	80,105 ASF

B. MINNEAPOLIS SPACE AND PROXIMITY CONSIDERATIONS

1. a. This facility will require a single, main entrance. This main entrance should use two sets of double doors. Floor grates, melt-away steps (if steps are needed) and similar items should be utilized to reduce the amount of dirt, snow, etc. brought inside the facility.

   b. This main entrance should bring visitors directly to a small check point area.

   c. Ideally, the reception area and offices should be right off the main entrance and the check point next to or near the reception desk.

   d. Most of all, only the reception area would be accessible without first going through the check point!

2. Outside the Minneapolis facility's main entrance, it would be desirable to have an outdoor lounge area. This would include permanent sitting benches and attractive landscaping.

3. On the exterior of the Minneapolis facility should be a loading dock with double door access to the building. This dock should be situated close to the gymnasium storage area and the locker room area if at all possible.

4. The snack area should be within the reception room, but out of sight from the main entrance.

5. As described in the individual detail sheets, it is highly desirable to have the gymnasium supervision room directly attached to both gyms close to the gym storage room. Perhaps the gym storage room could be used in conjunction with the recessed bleachers.

6. a. The swimming pool should try to be the closest activity area to the locker rooms.

   b. The sun decks off both pools are important features, as is their proper exposure to sunlight.

7. After the swimming pool, the racquetball courts should be the next closest activity area to the locker rooms. Access to the racquet courts should be only from the locker room area.

8. The meeting room should be situated between the reception/administration office and the sport club office.

9. a. The locker equipment/sales room should be situated between and immediately next to the entrances to both locker rooms.

   b. The entrances to the locker rooms will be the only way in and out of the locker rooms. Anyone using the locker rooms will have to use these entrances and walk directly by the locker equipment/sales room counter.

10. It is suggested that the general exercise room and the multi-purpose mat room be next to each other.

C. MINNEAPOLIS SPACE DESCRIPTION AND SIZE

MAIN ENTRANCE FOYER

Square footage not determined.

This area is that which a visitor immediately enters after passing through the main doors.

The ceiling would be standard height.

Lighting should be the "ultra light" natural effect.

The flooring should be tile or similar durable, easy to-clean material.

One drinking fountain should be in this area.

One wall clock should be in this area.

To one side the foyer should lead to the check point and reception desk.

On the wall facing and opposite of the main door will contain a display case with lockable, glass windows. The case will be approximately 3 feet high and installed at eye level. This case will run the full length of the wall, except for space for 3 video screens. One of these screens will be in the center of the wall, the others equidistant from that screen to the corners.

On the wall opposite the access to the reception desk will be a tackboard, approximately four feet high, installed at eye level. This would run the full length of the wall except for a space in the center of the wall where a "campus source" type electronic display will be installed.

On the wall on one side of the door and also on the wall under the tack board should be permanent benches for sitting.

In the wall between the main door and the reception desk should be pay lockers for leaving coats, books, etc.

MINNEAPOLIS GYMNASIUM I

94' x 220' 20,680 assignable square feet.

Multi-use playing area to include (with lines painted for)

4 Basketball Courts:	50 x 84 feet
6 Volleyball Courts:	30 x 60 feet
6 Badminton Courts:	20 x 44 feet

Note: A jogging track is definitely needed in the Minneapolis facility and it is expected this will be obtained through the remodeling of the fieldhouse.

The ceiling would be at least 30 feet high (of non-obstructed play space). The ceiling should be composed of materials and paint with the best acoustical capabilities: Mercury vapor lights (protected or shatter-proof) would be used. Switches for these lights would be located immediately next to the supervision room and would be keyed to restrict use.

The gym floor surface would preferably be composed of a wood material suitable for basketball, volleyball, and badminton.

2 large wall clocks, opposite of each other should be installed.

2 recessed drinking fountains/spit tanks: one located near the gym entrance and supervision room, the other on the opposite side and the other half of the gym area.

Built-in speakers (4) for P.A. system, at least one in each corner. P.A. may be used from supervision room or main office.

There should be 4 microphone jacks, one on each wall - these jacks will tie into the P.A. system.

The ventilation system should be designed so that air is not forced directly over the center of a playing area.

2 Tackboards, approximately 4' x 6', one located on each side of the supervision room near the main entrance.

8 electrically controlled glass basketball backboards/baskets. These must be able to be elevated out of play for the other sports. Controls for these would be keyed and located next to supervision room. The rims on these backboards must be retractable or non-bend.

There should be lightweight bleachers that are totally recessed within the wall and can be pulled out for use by one person. These bleachers should be three (3) sections, with each section approximately 15 feet long and 5 rows deep (total seating about 150).

Standards for volleyball and badminton nets (the number will depend on the configuration of the courts). Floor plates for volleyball and badminton standards (the number will depend on the configuration of the courts).

2 electrically controlled scoreboards. These scoreboards would be designed so that they could be operated as one or independently of each other. They would be controlled from the supervision room and be located opposite each other on the 100' walls. The scoreboards should show game time (at least 20 minutes), team score, and period.

All doors leading to this area should be keyed for locking.

At least one entry to this area must have double-doors to handle large equipment.

The walls would be painted with large murals of sports motif.

1 attached supervision room, approximately 12' x 12' (10' ceiling), is needed. This room will be located midway (length wise) and connected to the gym area, and next to the gym's main entrance. A dutch-style (two halves) door will provide direct access between the room and gym area. This should be keyed for locking. The remaining wall facing the gym will be composed of an unbreakable plexi-glass window, approximately 42" in height and 40" from the floor. Running along underneath the window would be a working counter top. Under the counter would be a space to pull up a chair for desk work, 2 shelves, and the rest of the space would be cabinet storage.

For the supervision room: Off one of the other walls there would be a storage closet (approximately 4' X 6'). A tackboard (approximately 3'X5') would be on the fourth wall. A door into the equipment room would hopefully be possible. The supervision room would need 2 desk chairs (on casters), 1 telephone (with intercom line) scoreboard panels, microphone for P.A. system, built-in speaker for P.A. system.

NOTE: It is hoped this supervision room would be connected to both Gym I and the auxiliary gym. The wall facing the auxiliary gym would be designed in the same manner as the wall facing the Gym I.

AUXILIARY GYM

110' x 94' 10,340 assignable square feet.

Multi-use playing area to include (lines need to be painted for these courts)

2 Basketball Courts: 50' x 84'
3 Volleyball Courts: 30' x 60'

The ceiling would be at least 30 feet high and should be composed of materials and paint with the best accoustical capabilities. Mercury vapor lights (protected or shatter-proof) would be used. Switches for these lights would be located immediately next to the supervision room and would be keyed to restrict use.

The gym floor surface would preferably be composed of a wood material.

2 large wall clocks at each end of gym.

2 recessed drinking fountains/spit tanks on opposite sides of the gym.

Built-in speakers (2) for P.A.system, located opposite each other on ends of the gym.

There should be 4 microphone jacks, one on each wall - these jacks will tie into the P.A. system.

The ventilation system should be designed so that air is not forced directly down over the center of the playing courts.

1 Tackboard, approximately 4' x 6', one located next to the supervision room.

2 electrically controlled basketball backboards/baskets. These must be able to be elevated out of play for other sports. Controls for these would be keyed and located next to the supervision room. The rims for these backboards must be retractable or non-bend.

3 sets of standards for volleyball nets, as well as three sets of floor plates for the standards.

1 electronically controlled scoreboard. This scoreboard would be located in the center of the 100 foot walls. Controls would be in the supervision room. Scoreboard would display game time (at least 20 minutes), then score, and period.

There should be lightweight bleachers that are totally recessed within the wall and can be pulled out for use by one person. These bleachers should be in two (2) sections, with each section approximately 15 feet long and 5 rows deep (total seating about 100).

1 ATTACHED SUPERVISION ROOM - This would be the same supervision room detailed with Gym I. This supervision room would have doors and windows for both gyms.

All doors leading to this area should be keyed for locking.

At least one entry into this area must have double-doors to handle large equipment.

GYMNASIUM STORAGE ROOM

2200 assignable square feet.

This room should be situated so that there is direct access from both Gym I and the Auxiliary Gym to this storage room. If possible, access from the supervision room to this room would also be desirable.

The ceiling of this room should be at least 10 feet high.

There should be large, double doors from the room opening onto both Gym I and the Auxiliary Gym.

There should be large storage hooks hung from the ceiling to store nets. Eight (8) pair of hooks near Gym I door, four (4) pair near Auxiliary Gym door.

There should be eight (8) wooden storage cabinets. There should be approximately 6' high, 6' wide, 3' deep. Each of these will have double doors that can be locked and will have 3 adjustable shelves.

Within this room will be a separate 10 x 20 room for equipment storage. There will be one door (which can be locked) to this room and should be located near to the supervision room. In this smaller room, two walls should have floor to ceiling shelves. These shelves should be 18" deep and 18" apart.

All doors leading to this area should be keyed for locking.

This room will include supervision room (12' x 12' x 10'). This would be the same supervision room detailed with Gym I and Auxiliary Gym.

MINNEAPOLIS RECREATIONAL SWIMMING POOL

A pool of 25 yards (75 feet) in length and 74 feet wide (10 lanes of 7 feet plus 2 feet on each side). 5725 assignable square feet (includes handicapped ramp).

The pool depth should be four (4) feet on the ends and dropping to six (6) feet in the center. Lane markings will need to be painted.

Immediately next to and connected to the pool (length-wise) will be a handicapped ramp. This ramp will be approximately 35 feet long and 5 feet wide. The ramp begins at deck level and goes down into the water with a very gradual slope. The deck separates this ramp and the pool until the very end of the ramp, where a five foot opening connects the two areas. This connection should be at the corner of the pool (4 feet deep).

The pool should be situated so that one side (length-wise preferably) will face a south-south west direction for maximum sunlight. On this side would be floor to ceiling windows with creative glass doors. Desired is an outdoor atmosphere during warm months of the year.

Immediately outside this wall will be a creatively designed outdoor sunning deck. This deck will be accessible for users in swimming attire only. They will enter the deck from the pool area or from a separate entrance that comes from near the main entrance. This sun deck will have about twice the square footage as the swimming pool. The surface will be a flagstone/cement type. An effective security/privacy fence will surround this area. A wash-off shower and drain should be located just outside the entrance to the pool area.

Off the pool deck should be a storage room approximately 8 feet by 6 feet. The door should directly connect this room and the pool deck. The machinery room should be directly connected to the pool deck area. Doors to both these rooms should be keyed for locking.

The pool machinery and equipment (such as fuses, pipes, etc.) should be resistant to heat and humidity. If possible, an emergency back-up power source should be installed for the pool machinery. Local water quality should be analyzed before selecting the pool's filtration system.

The pool deck should be made with a non-glaze tile surface. The deck surface should be at least 10 feet wide on three sides, and 20 feet wide on the sun-deck side. Benches which fold down from the wall should be placed on each wall (except the sun-deck side). There should be at least 3 benches on each wall, with each bench approximately 8 feet long.

The pool gutter system should be made with non-glaze tile and constructed so that the water level of the pool is flush with the pool deck surface.

The pool deck should have excellent drainage, taking water away from the pool and avoiding any standing puddles. This includes the hallway leading to the pool area. Water faucets for hoses should be installed on the wall on each side of the pool.

The doors leading to the pool area should be keyed for locking, including the glass doors leading to the sun deck. At least one entry should have double doors.

Ceiling height will be standard height for a pool area. Ceiling and wall materials will be of special quality to provide best accoustical results and endure the heat and humidity. Walls should be painted with appropriate murals.

Lighting should be the ultra-light (natural effect) type. Underwater lights will be necessary. Light switches should be keyed to restrict use.

A large pool timing clock will be required. Also one large wall clock will be needed.

One recessed drinking fountain/spit tank should be located near the pool entrance from the locker rooms.

Two (2) permanent lifeguard stands made of stainless steel will be required. These should be on opposite sides of the pool from each other, midway in the pool area.

Lane markers (9) will be needed, and apparatus to connect these markers will need to be installed in the sides of the pool.

There will be a telephone with intercom capability near the pool entrance (leading from the locker rooms).

Four (4) built-in speakers for the P.A. system will be in each of the four corners of the pool. Two (2) outdoor speakers will be on the outside wall to service the sun deck.

Near the pool entrance (from the locker rooms) will be a display case approximately 3 feet high and 7 feet long at eye level. The case will be made of stainless steel and plexiglass. Tackboard will be in the back of the case.

Preferably, all metal fixtures, doors, frames, and any other metal hardware be stainless steel to improve durability, appearance, and maintenance.

MINNEAPOLIS RACQUETBALL COURTS

Twenty racquetball courts; each court 20 feet wide, 40 feet long, and 20 feet high. Total assignable square feet: 16,000.

The walls of each court will be made of high quality materials, which are highly durable and resilient. The walls could be painted white with a special paint that provides extended protection. The appropriate lines will need to be painted.

Construction for these courts needs to be done most carefully, with proper materials for walls and sealers.

Lighting must be recessed with standard illumination. Controls for all court lights will be in the locker equipment room for court control.

The floors should be of wood material.

2 courts should have back walls of plexi-glass for spectators viewing.

12 courts should be equipped with recessed connection for wallyball nets.

Overhead viewing areas (which look into the back of the courts) should run between and connect all of these courts. In this over-head area should be one (1) wall clock and one (1) P.A. speaker on each end of the viewing area.

Key boxes for personal items should be installed on each door of each court - access to these boxes would be available only when the door is open.

The door for each court should be keyed individually for security locking.

SQUASH RACQUET COURTS

Four (4) squash singles courts; each court 18 feet 6' wide, 32 feet long, and 16 feet high. Total assignable square feet is 2385.

The walls of each court should be made of high quality materials, which are highly durable and resilient. The walls could be painted white with a special paint that provides extended protection. The appropriate lines need to be painted. Construction for these courts needs to be done most carefully, with proper materials for walls and sealers.

If possible, these courts should be connected to the same overhead viewing area that connects the racquetball courts.

Lighting must be recessed with standard illumination. Controls for all court lights will be in the locker equipment room for court control.

The floors should be of wood material.

The door for each court should be keyed individually for security locking.

WEIGHT ROOM

This room should be 100 feet long and 55 feet wide. Total assignable square feet: 5500.

The ceiling height should be standard height. Lighting should be the "ultra-light" natural effect. Ceilings and walls should provide best possible a-coustical effect.

The flooring should be a highly durable, padded synthetic material that can be easily cleaned.

One wall will have mirrors extending about 8 feet high from the floor. On an adjacent wall leading into the corner with the mirrors will be heavy duty ballet barre extending 15 feet out from the corner.

2 large wall clocks should be located at opposite ends of the room.

There should be one recessed drinking fountain and spit tank immediately out-side the door to the room.

2 built-in speakers, on opposite sides of the room, should be installed.

A telephone with intercom capabilities should be located very close to the entrance.

One tack board approximately 4 feet high and 8 feet long should be on the wall near the entrance to the room.

This room will require extensive ventilation if possible.

The doors leading to this area should be keyed for locking.

At least one entry to this area must have double doors to handle large equipment.

MULTI-PURPOSE MAT ROOM

This room should be 40 feet wide and 40 feet long. Total assignable square feet: 1600.

A storage room 8 feet by 8 feet would be located immediately off the main room if possible. Otherwise this room would occupy one corner (opposite the entrance) of the main room. This storage room would have standard lighting and ceiling height. A door will directly connect the sotrage and main room. Door of this room should be keyed for locking.

The main room will have a ceiling of standard height. Lighting would be "ultra-light" natural style.

The floor will be a suspended wooden floor covered by 40 feet x 40 feet standard gymnastics/wrestling mat.

On the wall with the entry door to the room should be floor to ceiling mirrors.

Adjacent to the mirrored wall and on opposite wall from the storage room, ballet barres should be installed at standard height. These should run the full 40 feet length of the wall.

On the 2 remaining walls (without mirrors and ballet barres) polyfoam protective mats should be installed from the floor up about 8 feet.

One large wall clock should be installed near the entrance.

One recessed drinking fountain/spit tank should be immediately outside the door to the room.

One built-in speaker for the P.A. system should be installed.

One telephone jack should be located near the entrance.

The doors leading to this area should be keyed for locking.

At least one entry to this room must have double doors to handle large equipment.

RECEPTION/ADMINISTRATION OFFICE

Total assignable square feet: 800.

Within this area will be a coordinator's office, 10 feet by 12 feet, situated in one corner of the 20 feet by 20 feet area. This office will be walled off with a single door leading into the reception area. If possible, an outside window should be in this room. The coordinator's office will have a standard height ceiling with "ultra-light" natural lighting. The floor will be carpeted. There should be an electrical outlet on each wall. One telephone with intercom capability is needed. One desk (30"x60") with desk chair. 2 guest chairs. One 40" wide x 80" high bookcase. One 30" x 50" file cabinet. One standard size credenza. One wall clock. The door to this office should be keyed for locking.

The remaining space in the 20 feet x 20 feet area will be for reception and day to day operations. This area should be carpeted and have standard ceiling height. The lights should be the "ultra-light" natural lighting type.

One wall clock will be needed.

A service counter with a roll-up locking device to secure the office area is needed. This service counter should be near the building's main entrance. It should be at least 8 feet long.

Outside the office area next to (not in front of or under) the counter should be attractive material holders so that pamphlets and flyers can be displayed and made available for pickup. Space for at least 20 different items is needed.

Inside the office area in front of and beneath the counter should be a large working desk counter. This desk counter should be designed so that a desk chair may be pulled up for a comfortable work position. This counter should also be designed with correct form and space as to accommodate a typewriter, a cash register, and a computer terminal. A telephone should be installed at this location. At least 2 desk-level electrical outlets should be installed. What is desired with this space is a working area where a person working can serve individuals at the counter, while also having a computer terminal, cash register, telephone, and typewriter immediately at hand. Shelves should be at hand to store printed materials.

Located near the service counter (but out of reach of the public) will be the P.A. system console with microphone. This console should have the capability to directly feed radio/taped music into the P.A. system. This console should also have the capability to control any and all speakers throughout the building at any time.

Within this office area there will be two (2) 30" x 60" file cabinets, one 40" wide x 80" high bookcase, one computer table, four (4) guests chairs, one desk (30" x 60") with attached typing shelve and secretary chair. A telephone should be on this desk.

On one wall (adjacent to the counter wall) should be a tackboard 4 feet high and 12 feet long.

The walls should be painted with a pleasant color, and some art work will be eventually displayed there.

Along one wall should be a working counter, approximately 8 feet long. One secretary's chair is needed here.

Near the entrance to this area should be an open-type closet with hanging hooks to hold approximately 10 coats.

All doors leading to this area should be keyed for locking.

Snack area will be arranged within this space.

SPORT CLUB OFFICE

Total assignable square feet: 600

The ceiling should be of standard height with "ultra-light" natural lighting.

The floor should be carpeted.

If possible, some outside windows should be in this room.

Two (2) wall clocks will be needed.

The walls should be painted with a pleasant color.

A large message holder with at least 60 individual spaces should be located next to the room's entrance.

There should be about 20 desk modules with desk top, pull out drawer and bin, and a desk chair. Each of these modules will serve 2-3 sport clubs. Each module covers approximately 32 square feet. A telephone will be installed at each module.

A small, open-type closet with hooks for hanging approximately 20 coats should be near the entrance.

All doors leading to this area should be keyed for locking.

MEETING ROOM

Total assignable square feet: 375

The ceiling will be standard height.

Lighting will be the "ultra-light" natural style lights with a reostat switch.

The room should be carpeted.

There should be at least 2 electrical outlets on each wall.

One wall clock is required.

One built-in speaker for the P.A. system is needed.

If there are windows, darkening blinds will be needed.

A telephone with intercom capability is needed.

In the center of one of the 25 foot walls should be a blackboard/movie screen combination device.

The furniture should consist of 3-4 small square conference tables (all same size) which can easily be moved or arranged into one large, workable table or several small units.

Needed will be 16 modest, stackable conference chairs with arms.

All walls should be soundproof.

A small open-type closet with hooks for hanging approximately 10 coats should be near the entrance.

All doors leading to this area should be keyed for locking.

LOCKER EQUIPMENT AND SALES ROOM

Total assignable square feet: 600

Ceiling height for this entire area will be standard with "ultra-light" natural style lighting.

Flooring should be of durable, easy to maintain quality.

One wall clock will be needed.

One built-in speaker for the P.A. system should be installed.

A service counter should be in one of the 20 foot walls. The counter should be approximately 8 feet wide. A roll-up, locking cover for the counter is needed. Directly under this counter and running the length of the wall should be large storage shelves (approximately 16" high, 36" wide, 16" deep).

Off to the side of the counter should be a working counter to accommodate a cash register and telephone. Also in this location should be the control panel for the lights on the racquetball and squash courts. One desk chair would be needed for this space.

Approximately 10 feet in from the counter should be an interior wall with a large, lockable door in the middle of this wall.

On the counter-side of this wall (facing customers) on one side of the door should be display shelves going floor to ceiling. On the other side of the door should be a 4 feet high and 7 feet long tackboard. There should be electrical outlets on each of these walls.

In the back room of this area (which would end up about 20 feet by 20 feet), there should be sturdy, adjustable shelves running from floor to ceiling on the three walls not with the door. Each wall should have an electrical outlet.

All doors leading to this area should be keyed for locking.

LOCKER ROOMS

Total assignable square feet: 10,000.

Locker room should be designed for maximum number of lockers. These should be half lockers, 12" wide, 16" deep, and 36" high. An aisle of at least 6 feet should be between the rows of lockers.

Ceiling height should be standard.

Lighting should be "ultra-light" natural style.

The floor should be of non-glaze tile surface, except for aisles between lockers which are to be carpeted.

Permanent benches should be installed down the middle of the aisles between the lockers.

Preferably the walls of the locker rooms will be a tile material.

3 wall clocks will be needed.

4 speakers for the P.A. system in each of the four corners of the room are needed.

2 recessed drinking fountains should be in each locker room.

A portion of one wall of each locker room should have approximately 10 coat hooks, a permanent sitting bench, and four (4) shelves about 8 feet long, 12 inches high, and 12 inches deep, running from the floor up.

Eye level mirrors should be installed along two of the walls. Small counters should be directly below these mirrors. There should be at least 6 electrical outlets throughout the length of the mirror. On one wall of each locker room should be one full length mirror.

A large set of scales should be centrally located in the locker room.

All doors leading to this area should be keyed for locking.

At least one entry to these areas should have double doors to handle large equipment.

SHOWER/DRYING ROOMS

Two equal sized shower/drying rooms according to the accepted standards. Total assignable square feet: 1,400.

Standard ceiling height and standard lighting.

The floor should be a non-glaze tiled surface.

There should be approximately 30 shower heads (with water-saving nozzles) in a shower area approximately 25 feet by 20 feet. The drying room area should be directly attached and about 30 feet by 10 feet in size.

Within the drying room should be at least 8 permanent wall dryers along on one 20 foot wall. On the opposite wall should be sinks (as many as possible) with mirrors above the sinks. A double electrical outlet should be between each sink.

Wall hooks for towels should be installed on the walls of both the drying room and shower room, the number of hooks equalling the number of shower heads and sinks.

In the shower room, soap dishes should be installed between the shower heads.

A built-in speaker in each drying room should be installed.

The toilet area will be right off the drying area.

SAUNAS/STEAM ROOMS

There will be a sauna and steam room in each of the two locker rooms (4 rooms total). Total assignable square feet: 400.

Each of these rooms is 10 feet by 10 feet.

Each will need the appropriate hardware and plumbing to heat these rooms properly.

In the saunas, a faucet with a pull chain should be installed over the heating unit.

Ceiling height will be standard. Lighting should be recessed.

The walls of these rooms should be of tile, as well as the surface of the benches.

The doors to these rooms should have plexi-glass windows.

Each room will have adquate floor drainage.

Each room will have two tiers of benches for seating. These benches will run the length of the 3 walls without the door.

The flooring should be a non-slip tile.

A standard size wall clock should be in each room.

A built-in speaker for the P.A. system should be installed.

Racks to hold magazines/newspapers should be installed directly outside the rooms next to the door.

On one wall immediately outside the doors to these rooms should be at least 10 wall hooks for hangining towels.

D. ST. PAUL - SPACE TABULATION

Room Name	Assignable Square Feet
Recreational Swimming Pool	3,625
Racquetball Courts	4,800
Old Pool and Racquetball Court Conversion	3,350
TOTAL	11,775 ASF

E. ST. PAUL - SPACE DESCRIPTION AND SIZE

ST. PAUL RECREATIONAL SWIMMING POOL

A pool of 25 yards (75 feet) in length and 46 feet wide (6 lanes of 7 feet plus 2 feet on each side). 3625 assignable square feet (includes handicapped ramp).

The pool depth should be four (4) feet on the ends and dropping to six (6) feet in the center. Lane markings will need to be painted.

Immediately next to and connected to the pool (length-wise) will be a handicapped ramp. This ramp will be approximately 35 feet long and 5 feet wide. The ramp begins at deck level and goes down into the water with a very gradual slope. The deck separates this ramp and the pool until the very end of the ramp, where a five foot opening connects the two areas. This connection should be at the corner of the pool (4 feet deep).

The pool should be situated so that one side (length-wise preferably) will face a south-southwest direction for maximum sunlight. On this side would be floor to ceiling windows with creative glass doors. Desired is an outdoor atmosphere during warm months of the year.

Immediately outside this wall will be creatively designed outdoor sunning deck. This deck will be accessible for users in swimming attire only. They will enter the deck from the pool area or from a separate entrance that comes from near the main entrance. This sun deck will have about twice the square footage as the swimming pool. The surface will be a flagstone/cement type. An effective security/privacy fence will surround this area. A wash-off shower and drain should be located just outside the entrance to the pool area.

Off the pool deck should be a storage room approximately 8 feet by 6 feet. The door should directly connect this room and the pool deck. The machinery room should be directly connected to the pool deck area. Doors to both these rooms should be keyed for locking.

The pool machinery and equipment (such as fuses, pipes, etc.) should be resistant to heat and humidity. If possible, an emergency back-up power source should be installed for the pool machinery. Local water quality should be analyzed before selecting the pool's filtration system.

The pool deck should be made with a non-glaze tile surface. The deck surface should be at least 10 feet wide on three sides, and 20 feet wide on the sundeck side. Benches which fold down from the wall should be placed on each wall (except the sun-deck side). There should be at least 3 benches on each wall, with each bench approximately 8 feet long.

The pool gutter system should be made with non-glaze tile and constructed so that the water level of the pool is flush with the pool deck surface.

The pool deck should have excellent drainage, taking water away from the pool and avoiding any standing puddles. This includes the hallway leading to the pool area. Water faucets for hoses should be installed on the wall on each side of the pool.

The doors leading to the pool area should be keyed for locking, including the glass doors leading to the sundeck. At least one entry should have double doors.

Ceiling height will be standard height for a pool area. Ceiling and wall materials will be of special quality to provide best acoustical results and endure the heat and humidity. Walls should be painted with appropriate murals.

Lighting should be the ultra-light (natural effect) type. Underwater lights will be necessary. Light switches should be keyed to restrict use.

A large pool timing clock will be required. Also one large wall clock will be needed.

One recessed drinking fountain/spit tank should be located near the pool entrance from the locker rooms.

Two (2) permanent lifeguard stands made of stainless steel will be required. These should be on opposite sides of the pool from each other, midway in the pool area.

Lane markers (5) will be needed, and apparatus to connect these markers will need to be installed in the sides of the pool.

There will be a telephone with intercom capability near the pool entrance leading from the locker rooms.

Near the pool entrance (from the locker rooms) will be a display case approximately 3 feet high and 7 feet long at eye level. The case will be made of stainless steel and plexiglass. Tackboard will be in the back of the case.

Preferably, all metal fixtures, doors, frames, and other metal hardware be stainless steel to improve durability, appearance, and maintenance.

ST. PAUL RACQUETBALL COURTS

Six (6) racquetball courts; each court 20 feet wide, 40 feet long, and 20 feet high. Total assignable square feet: 4800.

The walls of each court will be made of high quality materials, which are highly durable and resilient. The walls could be painted white with a special paint that provides extended protection. The appropriate lines need to be painted.

Construction for these courts needs to be done most carefully, with proper materials for walls and sealers.

Lighting must be recessed with standard illumination. Controls for all court lights will be in the locker equipment room for court control.

The floors should be of wood material.

Over-head viewing areas (which look into the back of the courts) should run between and connect all of these courts. In this over-head area should be one (1) wall clock and one (1) P.A. speaker at the end of the viewing area.

4 courts should be equipped with recessed connection for wallyball nets.

Key boxes for personal items should be installed on each door of each court-access to these boxes would be available only when the door is open.

The door to each court should be individually keyed for locking.

CURRENT ST. PAUL POOL AND RACQUETBALL CONVERSION

These areas will be converted for additional lockers or activity space, depending on the site location of the new swimming pool and racquetball courts.

Total assignable square feet: 3350.

SUMMARY OF THE ASSIGNABLE SQUARE FOOTAGE OF MINNEAPOLIS & ST. PAUL CAMPUSES

Minneapolis	- Space Tabulation Total	80,105 ASF
St. Paul	- Space Tabulation Total	11,775 ASF
TOTAL	- Assignable Square Footage (New & Remodeled)	91,880 ASF

IV. site

SUMMARY LISTING

ST. PAUL CAMPUS

SITE LOCATION
UTILITIES
CIRCULATION
SITE ELEMENTS
SITE AREA
  Architectural Context
  Available Area

APPENDICES

APPENDIX 1 - DEVELOPMENT COST SUMMARY/MINNEAPOLIS SITES
APPENDIX 2 - DEVELOPMENT COST SUMMARY/ST. PAUL
APPENDIX 3 - UTILITIES IN REMAINDER OF STUDY AREA FOR SITE A, MINNEAPOLIS CAMPUS (Figure 5)

LIST OF FIGURES

SUMMARY

STUDY PARAMETERS (Figure 1)

This study examines the feasibility of siting Recreational Sports Facilities on the Twin Cities Campus. The program calls for 78,190 assignable square feet on the East Bank of the Minneapolis Campus and 8,160 assignable square feet (indoor pool only) on the St. Paul Campus.

The criteria used for determining feasibility include utility locations, site circulation patterns, campus plans for the study area, site area studies, building shadows, and microclimate.

During the process of program development it was determined that proximity to existing facilities is very desirable. It is clear from program information and building committee discussions that the program can best be accommodated on sites immediately adjacent to Cooke Hall and the St. Paul Gym.

The Building Advisory Committee is concerned that if the program cannot be accommodated on the recommended site (pending the architects analysis), then a portion of the Memorial Stadium area should be considered as part of the buildable site. Such a buildable site area would be determined on the basis of retaining adequate field space for a soccer field which meets international standards.

RECOMMENDATIONS

MINNEAPOLIS CAMPUS (Figure 2)

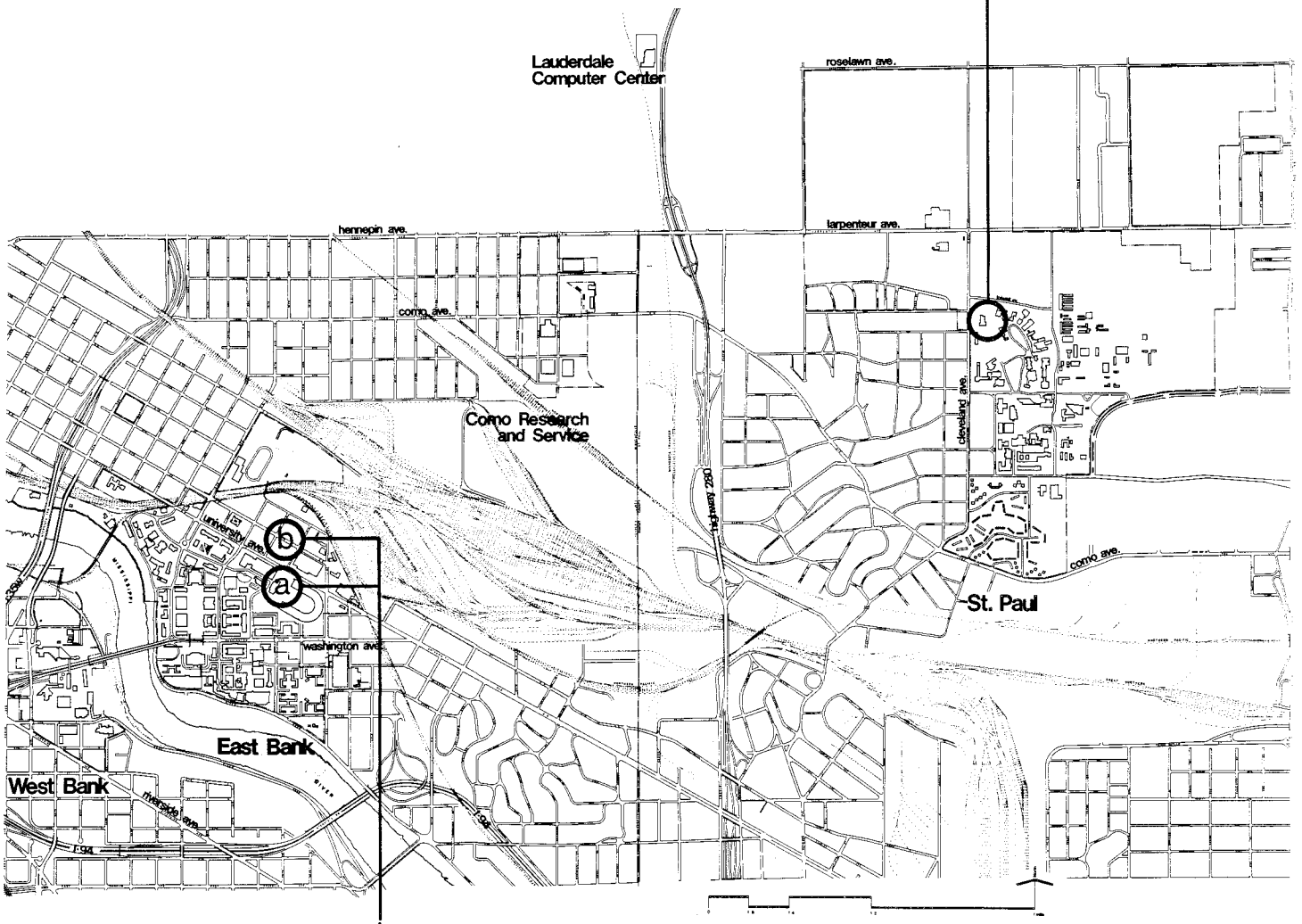
Based on the parameters examined in this study, either Site A (Cooke Hall) or Site B (Parking Lot 36) could accommodate a new Recreational Sports Facility on the Minneapolis Campus. Certain parameters, such as site area, service access and microclimate do not favor either site.

Site A is the preferred site for a number of reasons. There are strong economic reasons as well as programmatic advantages for integrating the existing facilities with a new facility. (See Appendix 1) There are additional site/functional relationships that also favor Site A. Site A provides access to the network of existing tunnels connecting Cooke Hall to the Fieldhouse, Williams Arena, and Memorial Stadium. The site can easily be reached by a large number of students who would use existing and future pedestrian circulation systems to access the new facility.

The existing pedestrian system through the Civil Mineral Engineering (CME) building suggests an eastward extension to Site A. Similarly, a north/south pedestrian spine should be preserved east of Cooke Hall to maintain existing pedestrian movement patterns.

1

St. Paul Campus Site

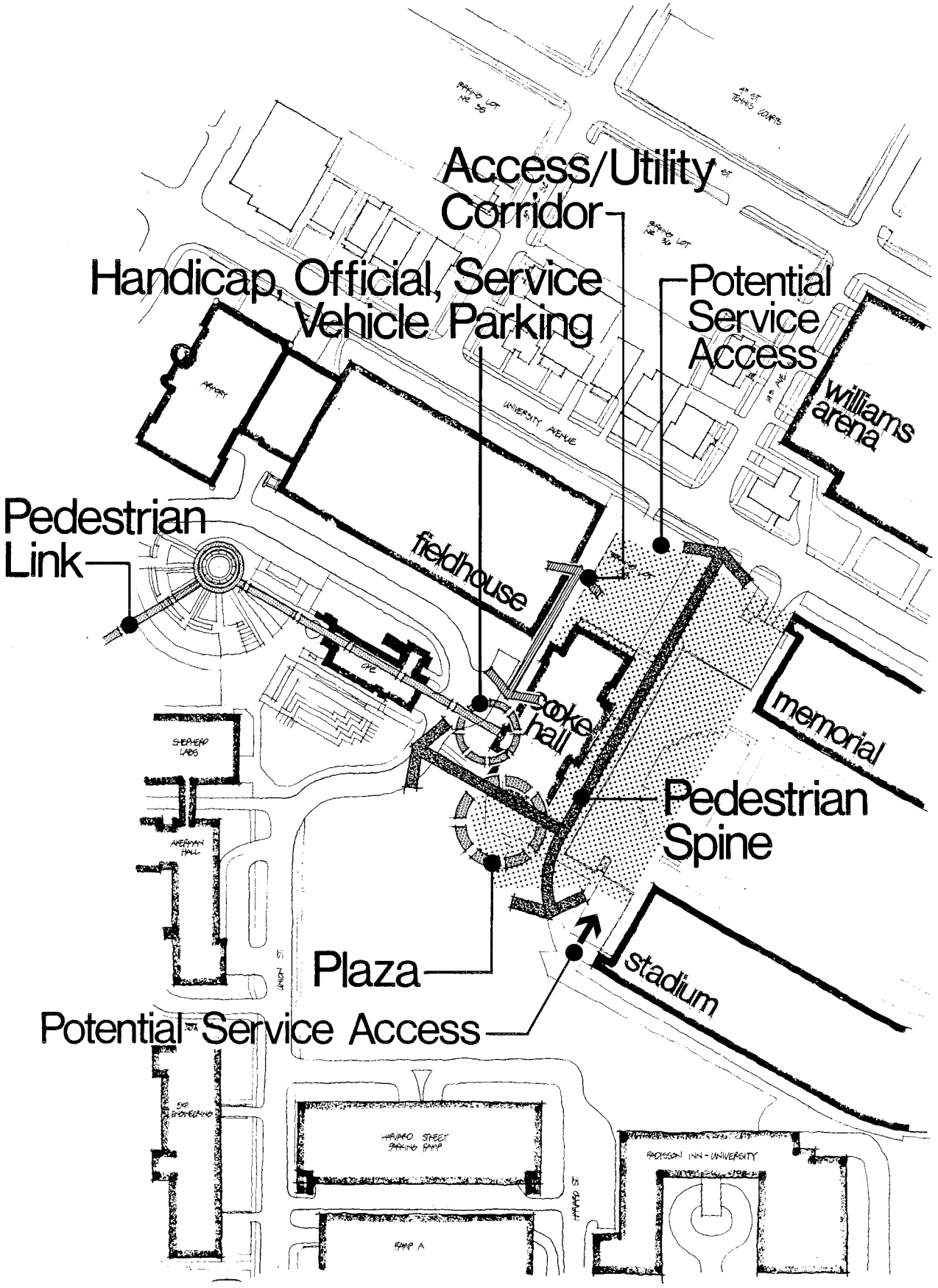


Minneapolis Campus Sites

Recreational Sports Facilities Study

site locations

2

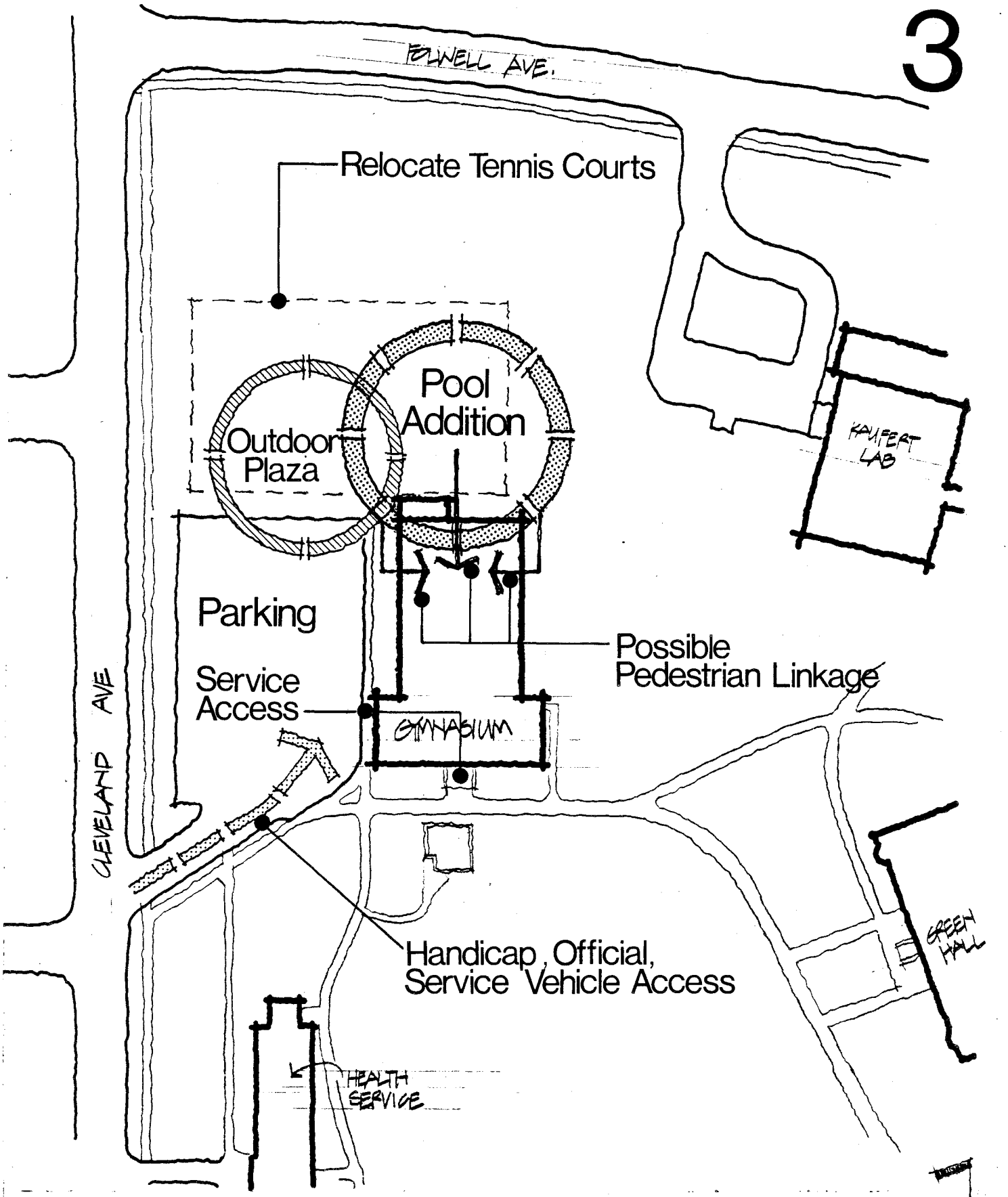


Recreational Sports Facilities Study
Minneapolis Campus

concept plan

ST. PAUL CAMPUS (Figure 3)

The proposed expansion of the existing gymnasium could be accommodated to the west, north or east. However, based on the site related parameters examined in this study, the most suitable location for a pool addition is north of the Gymnasium. While a development to the north would displace at least two tennis courts, this area is economically (in terms of impact upon utilities to the east) and functionally (in terms of disruption/displacement of existing parking facilities to the west) the most logical site. (See Appendix 2)



Recreational Sports Facilities Study

St Paul Campus

concept plan

SITE ANALYSIS

MINNEAPOLIS CAMPUS (Figure 4)

SITE LOCATIONS

Two alternative sites were considered to accommodate the Recreational Sports Facility needs of the Minneapolis Campus.

Site A

Site A includes the areas to the north, south and east of Cooke Hall. Cooke Hall is surrounded by Union Street, the Fieldhouse and Civil Mineral Engineering to the west; contract parking to the north; Memorial Stadium and public parking to the east; and recreational open space to the south.

For a variety of reasons, Site A appears to be the most appropriate site to accommodate the Minneapolis Campus Recreational Sports Facility Program:

1. Site A maximizes potential of existing facilities in Cooke Hall, thereby reducing the need to duplicate certain support facilities such as lockers.

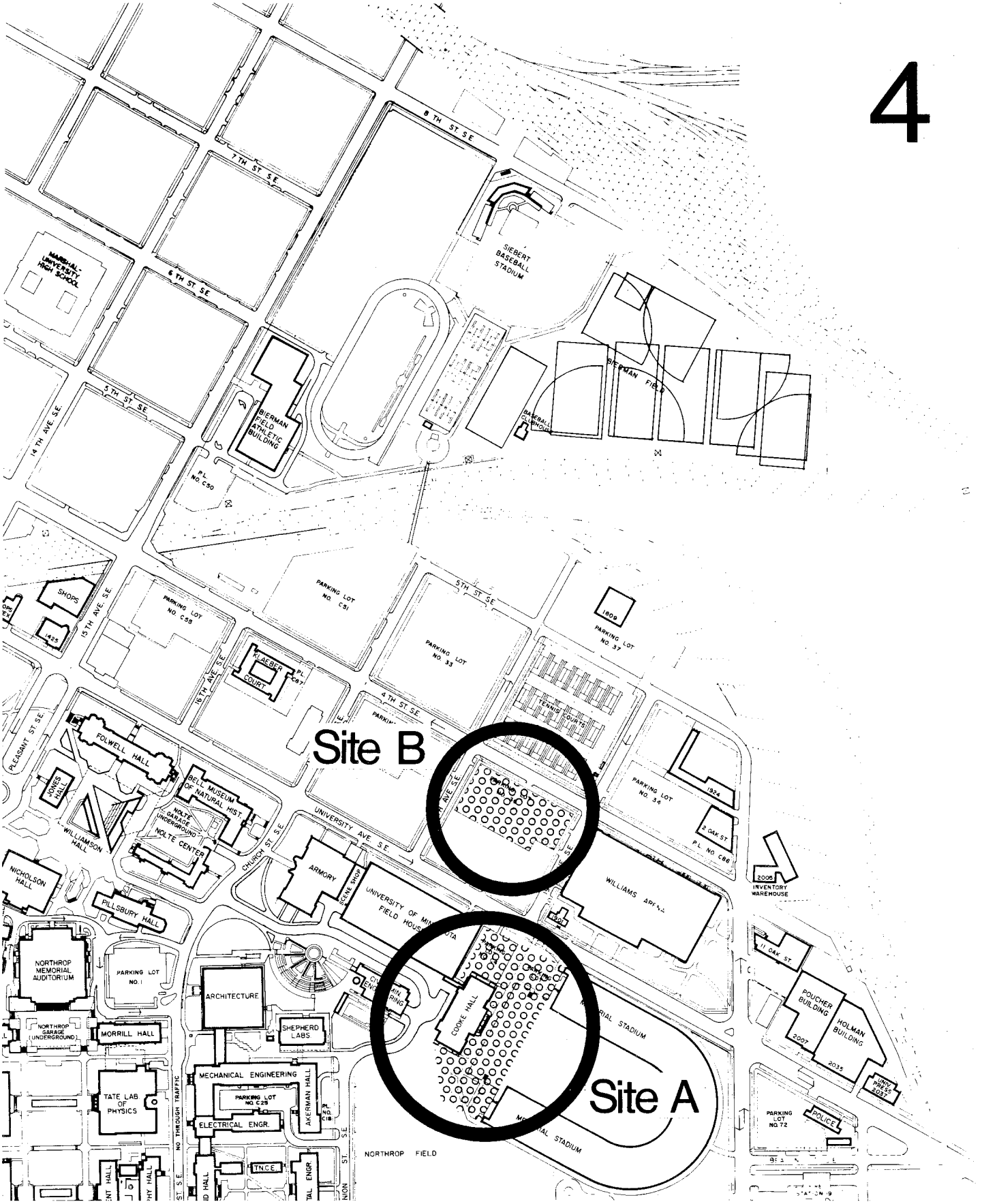
2. Site A affords possible underground connections to Cooke Hall, CME, Williams Arena, and the Fieldhouse.

Site B

Site B is Parking Lot 36, bounded by 4th Street S.E. on the north, 18th Avenue S.E. on the west and 19th Avenue S.E. on the east.

Lot 36 is surrounded by transient parking to the west, University tennis courts to the north, Williams Arena to the east and nonuniversity-owned housing (fraternities) to the south.

4



Recreational Sports Facilities Study

minneapolis sites

UTILITIES Figure 5)

Site A

Utility locations play a major role in determining the recommended buildable area for Site A. The utilities for Site A study area outlined in Figure 4 were evaluated in terms of their cost impact to the project as well as for their availability for the proposed development.

Based on this information the study area was modified to the recommended buildable site shown on Figure 5. The utilities relevant to the recommended site are discussed below. The utilities located in that portion of the study area not included in the recommended site are discussed in Appendix 3.

Utilities Within the Recommended Site Area

° Sanitary Sewer (A,B)

The existing sanitary sewer for Cooke Hall would be interrupted by the new building construction. The existing 15" sanitary sewer for Cooke Hall (A) extends to a manhole just north of the underground perimeter of the building, and from there it connects to a 15" combination sewer that connects to the City of Minneapolis 30" diameter combined sewer in University Avenue SE. Any new building construction north of Cooke Hall will require replacing the existing combination sanitary/storm sewer with a separate sanitary sewer which could be incorporated into the new building mechanical system. The sewer would be connected to the existing combined sewer just outside the new building at a minimal cost.

It would be required that the Cooke Hall sewer be kept in service during construction for the new building. It would be necessary to maintain a temporary line through the construction site as part of the general construction responsibilities. It is impossible to attach a cost to this.

If the proposed building design requires the lowest floor elevation to be lower than the existing Cooke Hall floor, then a sanitary sewer connection will have to be made to the Metropolitan Waste Control Commission sanitary interceptor sewer tunnel (B) which lies outside the recommended building site. Approximate cost of this connection would be $50,000.

° Steam Tunnels (C)

An existing heat tunnel (C) crosses the building site east of Cooke Hall and traverses in a north-south direction. This tunnel has a branch serving Cooke Hall and the North Tower of the Stadium. It extends beyond the building site to the north and combines with the pedestrian tunnel near the North Tower of the Stadium and continues under University Avenue to Williams Arena. The tunnel continues through Williams Arena, serving all of the University buildings along University Avenue and Oak Street. The tunnel has approximately one foot of cover under the surface of the Football Field. It steps up at its connection to the pedestrian tunnel that runs diagonally between Cooke Hall and the North Tower of the Stadium. From that point north, it has approximately 3½ feet of cover.

If the new building is designed at an elevation so that the lowest floor can be built above the top of the tunnel, then the tunnel can be left in place. Service for the new building could be taken from the steam lines in the tunnel at no significant cost.

If the new building interrupts the existing steam line, there would be a significant cost.

Before the steeam tunnel and piping could be removed, a temporary steam line would have to be constructed along the south and west sides of Cooke Hall to University Avenue in order to maintain service to the existing buildings. From there the tunnel would run along the south side of University Avenue outside the building construction limits and connect to the combination steam/pedestrian tunnel that crosses under University Avenue. The cost for this temporary service would be approximately $325,000.

That portion of the existing steam line that is interrupted could be incorporated into the new building design and be reconnected to the steam tunnel at the north and south end of the building line. The cost of installing new steam service through the building would be approximately $75,000.

° Storm Sewers (D,A,E,F)

The existing 24" storm sewer (D) that serves the Fieldhouse is located on the south side of University Avenue and lies adjacent to the proposed building site. A part of this storm sewer is located within the building site and would have to be relocated at an estimated cost of $30,000.

The existing Cooke Hall storm sewer would be disrupted by the new building construction. A storm sewer leaves the below grade north building wall of Cooke Hall and connects to a 15" combined storm sewer (A), which in turn connects to the City of Minneapolis 30" combination sewer (E) in University Avenue SE. The new building would require replacement of the existing storm sewer service with a separate storm sewer through the new building. The Cooke Hall and the new storm sewer could be connected to the existing combined sewer at a minimal cost.

The Cooke Hall storm sewer would have to be kept in service during construction as part of the building cost.

A part of the Football Field drain system (F) would be included in the new building site. The drain system at this part of the field is at the high point, therefore these lines could be cut off at the building line and plugged at a minimal cost. It should be noted that the new building storm sewer service should not be connected to the field drain system.

° Electric (G)

The primary electric service to Cooke Hall (G) extending along the south and east sides of Cooke Hall will be disrupted by the new building. A temporary service for Cooke Hall could be provided during construction by constructing a temporary transformer vault near the southwest corner of Cooke Hall and bringing a temporary service into Cooke Hall through the west wall of the building to the existing transformer vault. The cost would be approximately $85,000.

The new permanent primary service to Cooke Hall could be incorporated with the service for the new building. The cost for the Cooke Hall service cannot be accurately estimated at this time without knowing the location of the transformer vault for the new building. The minimum cost would be approximately $40,000.

Site B

There are no onsite utilities which could be used to service a new building. Necessary utility connections could be made between a new facility and the existing street utilities adjacent to the site.

° Electric

A manhole at the intersection of 4th Street and 19th Avenue would provide electrical service to the site. Cost: $40,000 - $50,000.

° Water Main

At minimal cost, water connections from the site could be made to any one of three water mains:

Under 18th Avenue - a 24" main
Under 4th Street - a 12" main
Under 19th Avenue - a 6" main

° Sanitary Sewer

Sanitary sewer connections can be made to the city 24" combination sanitary/storm sewer under 4th Street or to the city 12" sanitary sewer under 18th Avenue. Cost: Minimal.

° Storm Sewer

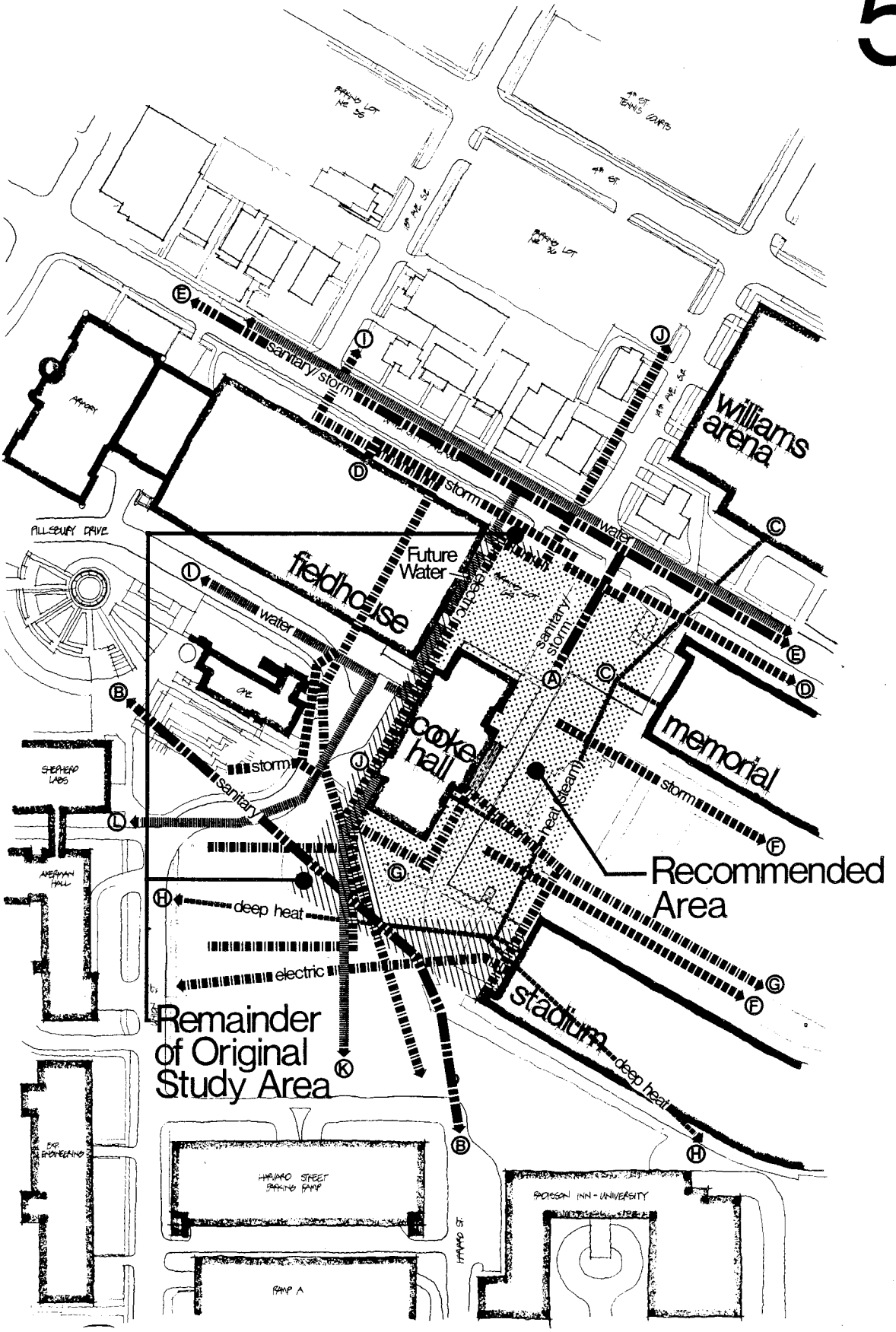
Probable connection would be to the city 24" combination sanitary/storm sewer under 4th Street. Cost: Minimal.

° Gas Main

Gas service would be to the 3" main at the intersection of 19th Avenue and University Avenue. Cost: Minimal.

° Steam Tunnel

Connection could be made to the existing steam/pedestrian tunnel south of Williams Arena. Cost: $100,000 - $150,000.



Recreational Sports Facilities Study
Minneapolis Campus

utilities

CIRCULATION (Figure 6)

Site A

Pedestrian flow occurs mainly to the north and south of Cooke Hall, along the south edge of Memorial Stadium and along University Avenue. Pedestrian flow patterns are expected to remain constant based upon existing barriers in the area and pedestrian generators such as the Harvard Street Parking Ramp and the dormitory superblock.

Special consideration should be given to existing and potential underground pedestrian circulation. It would be advantageous to develop an interior pedestrian link between the existing underground tunnels of Cooke Hall and the existing underground system which terminates at CME. (See Figure 2)

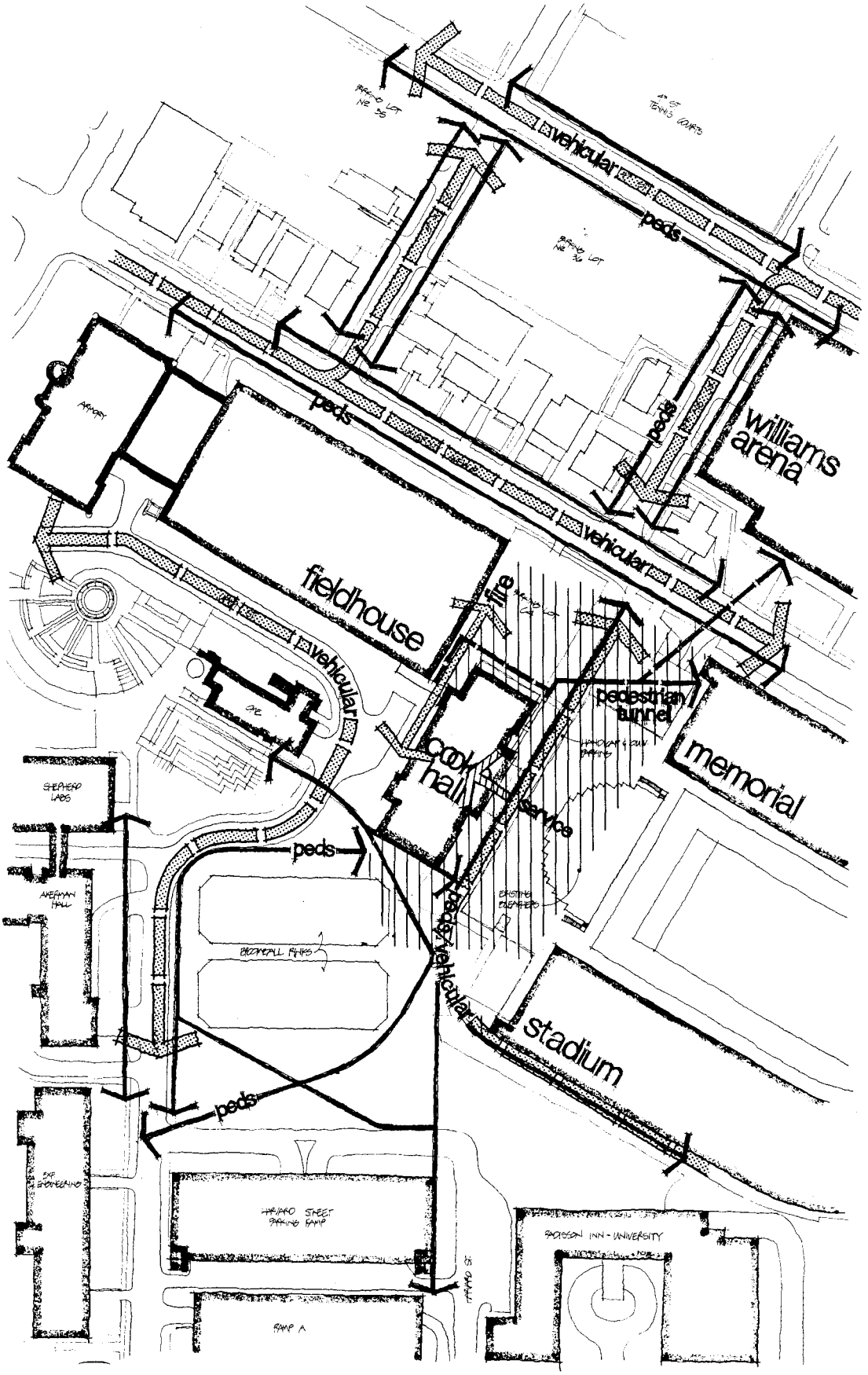
Union Street and University Avenue (one-way eastbound) provide the major vehicular access to the site with service access to the east side of Cooke Hall originating from the perimeter road on the south edge of Memorial Stadium. Currently there is a circulation conflict here with pedestrians and vehicles sharing the same roadway. This situation should improve when a new sidewalk system is developed north of the Harvard Street Parking Ramp in the Spring of 1985.

The official vehicle and handicap parking east of Cooke Hall would probably be displaced by the development of Site A. Replacement of these parking areas near the building should be addressed in the site development. For a Site A development, a 20' fire and emergency vehicle access corridor must be maintained between the east edge of the Fieldhouse and the west edge of Cooke Hall. The grade level entrance between the Fieldhouse and Cooke Hall in this area would then be eliminated to accommodate this access corridor. Facility development should maintain a connection between Cooke Hall and the Fieldhouse (on, above, or below grade).

Site B

Pedestrian circulation is accommodated on the west, north and east sides of the site by the existing city sidewalk system.

Fourth Street S.E. (one-way westbound) provides the major vehicular access to the site. Eighteenth Avenue (one-way northbound) west of the site and 19th Avenue (one-way southbound) east of the site provide secondary vehicular access. Service access to the site could be accommodated by any of these three streets.



Recreational Sports Facilities Study
Minneapolis Campus

circulation

CAMPUS PLANS (Figure 7)

Site A

Both the Northeast Quadrant Land Use Study and the Institute of Technology (I.T.) Expansion Plan impact Site A.

° Northeast Quadrant Land Use Study

The Northeast Quadrant Land Use Study suggests maintaining a pedestrian open space connection between the I.T. complex (west of Union Street), the area south of Cooke Hall, and the area south of Memorial Stadium to Oak Street.

The future of Memorial Stadium is still an issue in this area of the campus. Even though the decision has been made not to play Intercollegiate Football games in Memorial Stadium, questions still remain regarding the structure itself, its users and the impact of both its demolition and its continued use.

° Institute of Technology (I.T.) Expansion Plan

The Institute of Technology (I.T.) Expansion Plan proposes to move Union Street to the East. The suggested alignment would occur somewhere in the corridor shown on Figure 7. This would bring Union Street closer to the southern edge of Cooke Hall. While this action may never take place, its future feasibility should not be precluded by this project.

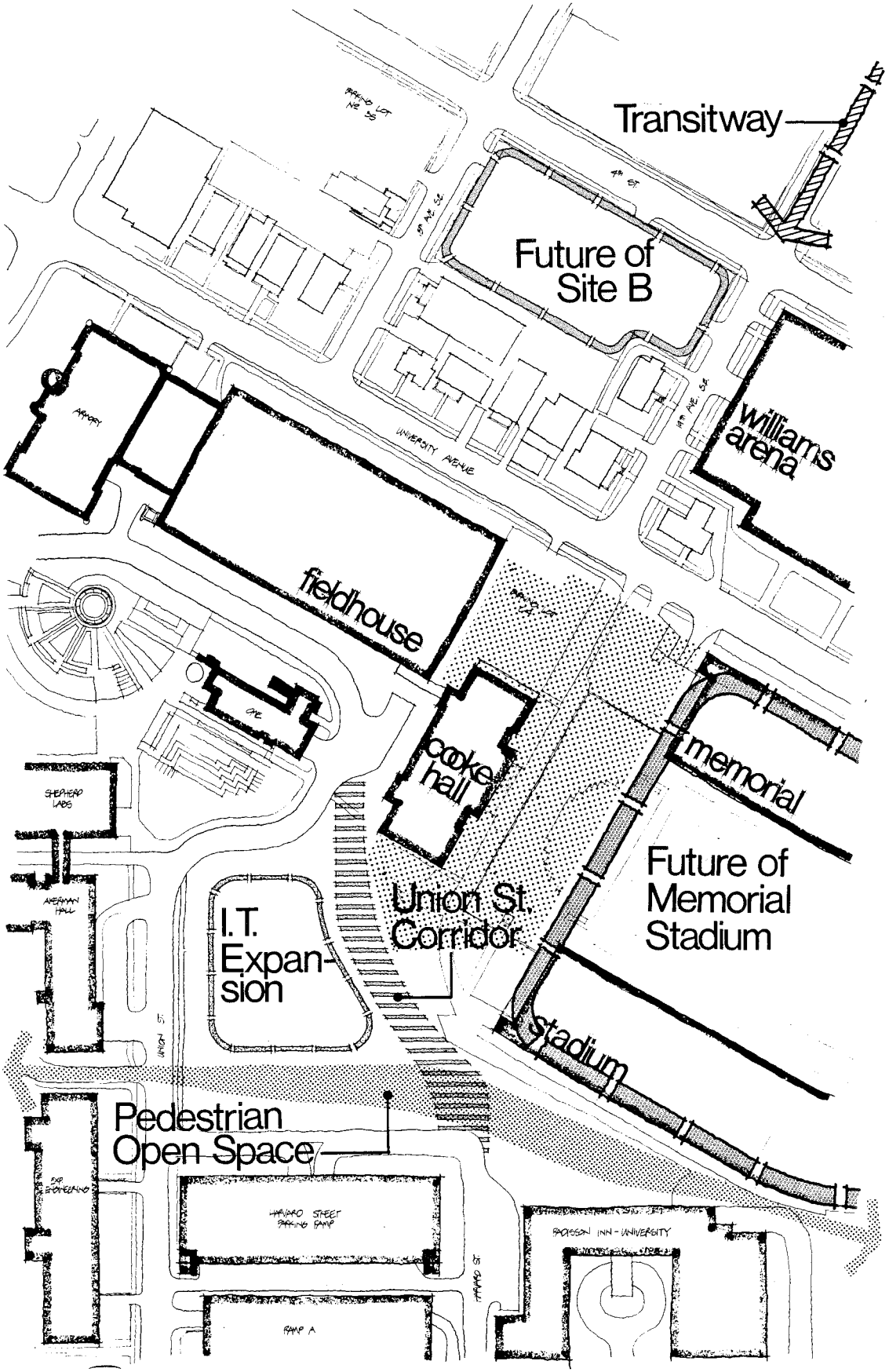
The plan also proposes to build a new facility for Earth Sciences on Northrop Field. A building in this area could limit the amount of sun available for a "solar plaza" south of Cooke Hall. Most of Northrop Field would be consumed by this building with an associated loss of open space now used by Physical Education and Recreational Sports.

Future of Site B

The Northeast Quadrant Land Use Study suggests that Site B be developed into a parking ramp as part of an overall plan to help consolidate the surface parking which dominates University-owned land north of University Avenue. With demand for on-campus parking remaining high, Site B will likely continue to function as a parking lot in the near future.

° Transitway

If the Intercampus Transitway is developed, buses going to and from the St. Paul Campus will exit and enter the Minneapolis Campus on 19th Avenue - directly northeast of the site.



Recreational Sports Facilities Study

campus plans

Minneapolis Campus

SITE AREA (Figure 8)

Site A

° Architectural Context

The majority of campus buildings in the study area have a European design character. In some cases, this European flavor has been used as a design criteria for recently constructed buildings in the study area (e.g. Radisson-Inn University, Harvard Street Ramp).

° Available Area

Based upon the square footages available, Site A can accommodate a new facility as outlined in the building program.

° Underground Space

It could be advantageous to incorporate mined space into the building design to accommodate program requirements and underground pedestrian circulation.

There would be three main advantages to incorporating mined space into a facility on Site A. First, the use of mined space allows for facility development where land would not otherwise be available. The second advantage is that one of two required vertical shafts for ventilation and pedestrian egress already exists at the east end of the CME Building west of the site. The third is that mined space on this site could be located to facilitate connections to the indoor Institute of Technology (I.T.) pedestrian corridor system.

The major disadvantage of incorporating mined space into the facility is that this type of space would be vertically remote (requiring an elevator) to the other recreational facilities. Remoteness poses security problems as well.

A new facility on Site A should provide connections to the existing pedestrian tunnels north of Cooke Hall that connect the Fieldhouse, Williams Arena, and Memorial Stadium. A pedestrian link between Cooke Hall and CME Building would encounter a 12" water main, a 12" storm sewer, and electric primary ducts. There would be significant problems and expense involved with rerouting these utilities.

° Building Heights

Building heights in the area vary from 29 feet to 90 feet. The height of Cooke Hall should dictate the height of a building development on Site A.

Site B

° Architectural Context

Site B is isolated from the main campus and is therefore not influenced by campus architecture to the same extent as Site A.

° Available Area

Site B can also accommodate a new Recreational Sports Facility based upon square footages available on the site and program requirements.

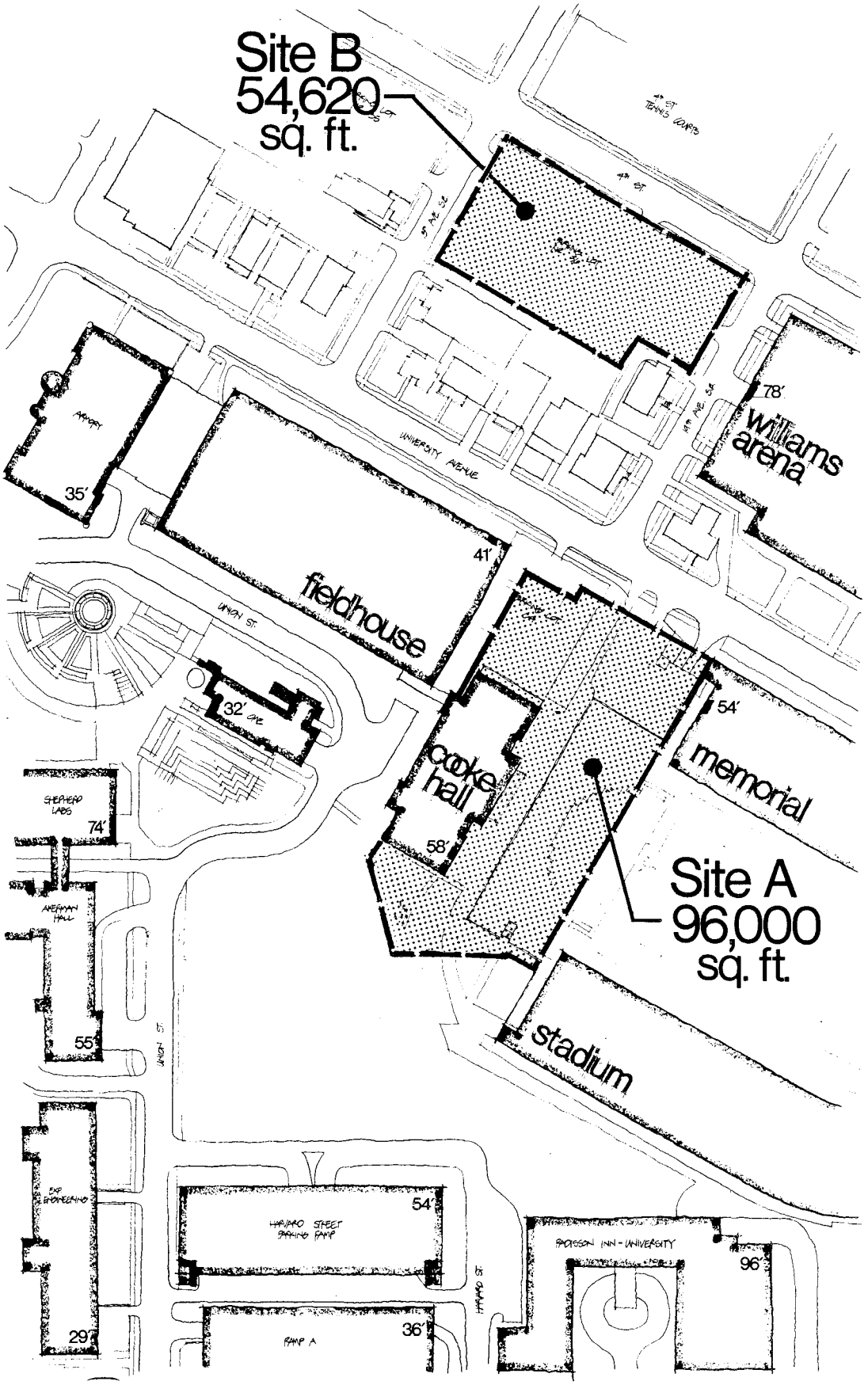
° Underground Space

It would not be economically feasible to incorporate mined space into a Site B development largely because of the expense associated with installing the required pedestrian egress and ventilation systems.

The cost to route a pedestrian tunnel from Site B to the Williams Arena tunnel system would cost between $200,000 and $300,000. Primary cost factors are the architecture of Williams Arena and major utilities under 19th Avenue.

° Building Heights

A new facility on Site B should respect the heights of the neighboring structures.



Recreational Sports Facilities Study
Minneapolis Campus

site area

0 10 25 50 150

BUILDING SHADOWS (Figure 9)

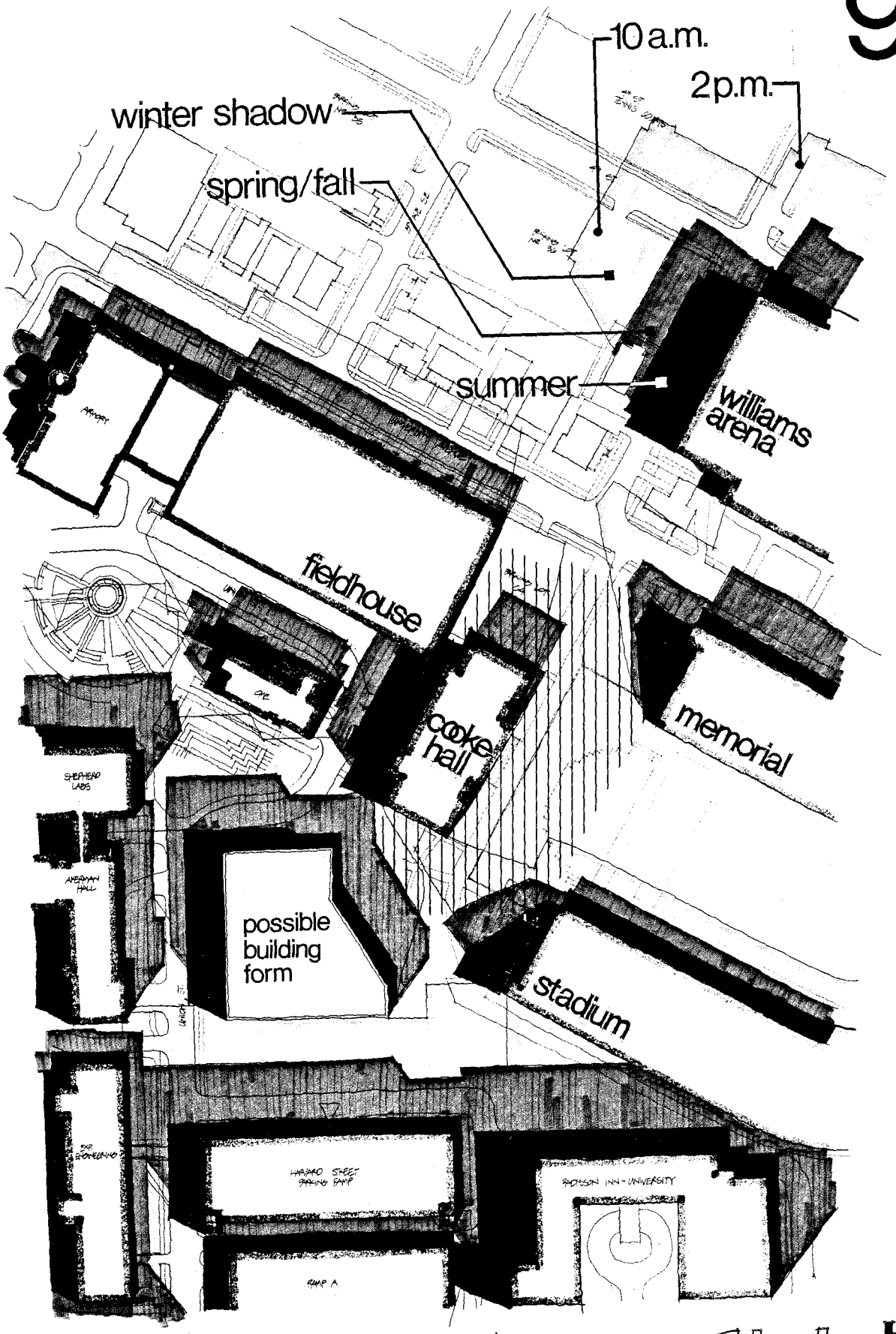
Site A

Existing buildings in the study area do not shade a significant portion of Site A any time of the year. If the development of Site A incorporates a "solar plaza" south of Cooke Hall, special consideration should be given to the height and siting of any future building development on Northrop Field. The "possible building form" shown in Figure 9 is a worst case situation, using a 55' building height.

Site B

Existing buildings near Site B do not shade a significant portion of the site and would probably not prevent the development of a "solar plaza" somewhere on the site.

9



Recreational Sports Facilities Study
Minneapolis Campus

building shadows

MICROCLIMATE - SITES A AND B (Figures 10 and 11)

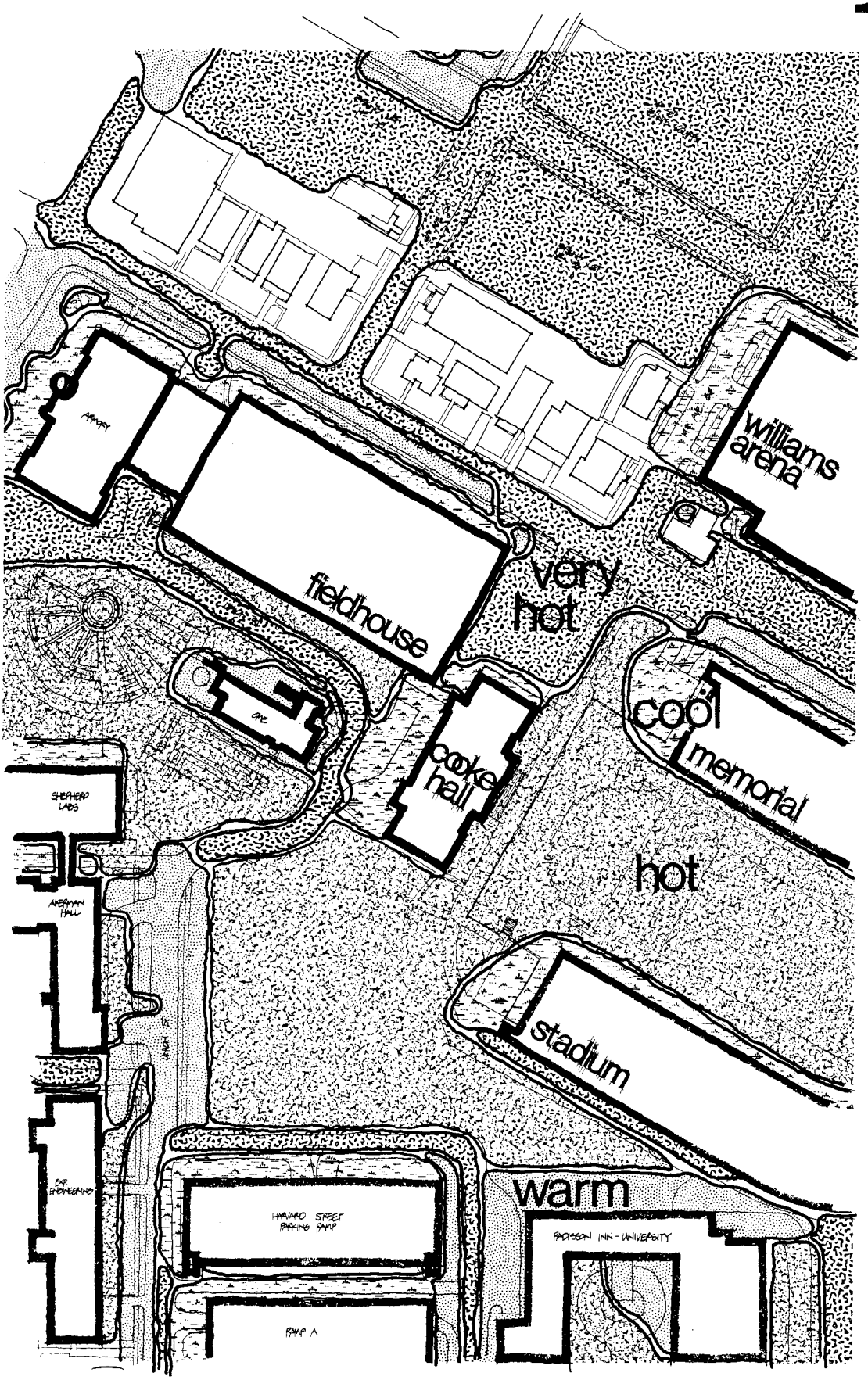
Figures 10 and 11 show summer and winter microclimate for the study area. The wide range of temperatures throughout the area are produced by diverse building heights, hard and soft walking surfaces, and overstory vegetation. The values for these temperatures are as follows (These values are for any given day and should be used for comparison only):

Summer Microclimate/	Cool	Warm	Hot	Very Hot
	66-71°F	73-76°F	77-87°F	87-96°F

In each case the ambient temperature is 67°F.

Winter Microclimate/	Cool	Normal	Mild
	11-15°F	16-20°F	21-29°F

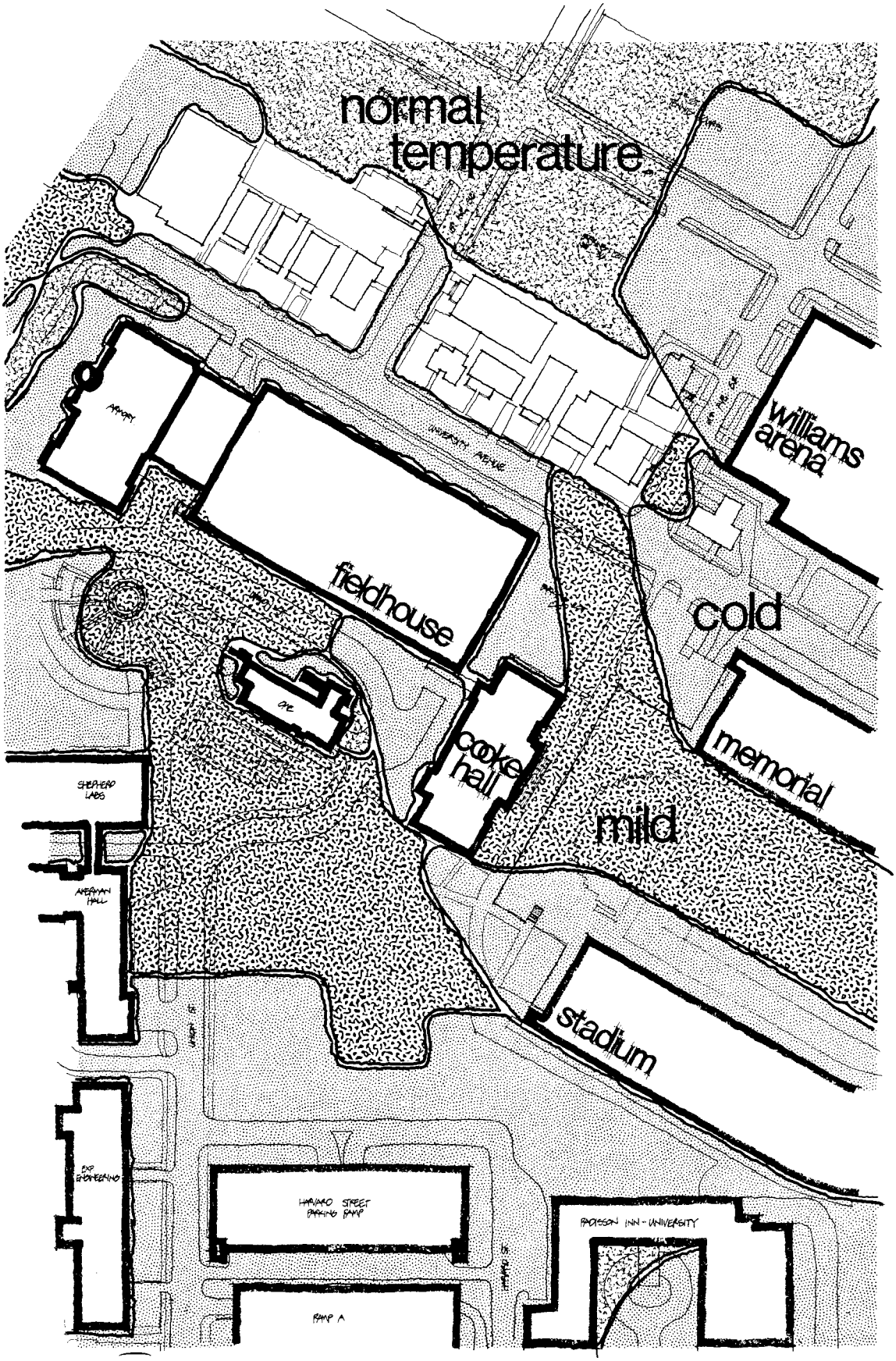
In each case the ambient temperature is 18°F.



Recreational Sports Facilities Study

summer microclimate

Minneapolis Campus



Recreational Sports Facilities Study

winter microclimate

Minneapolis Campus

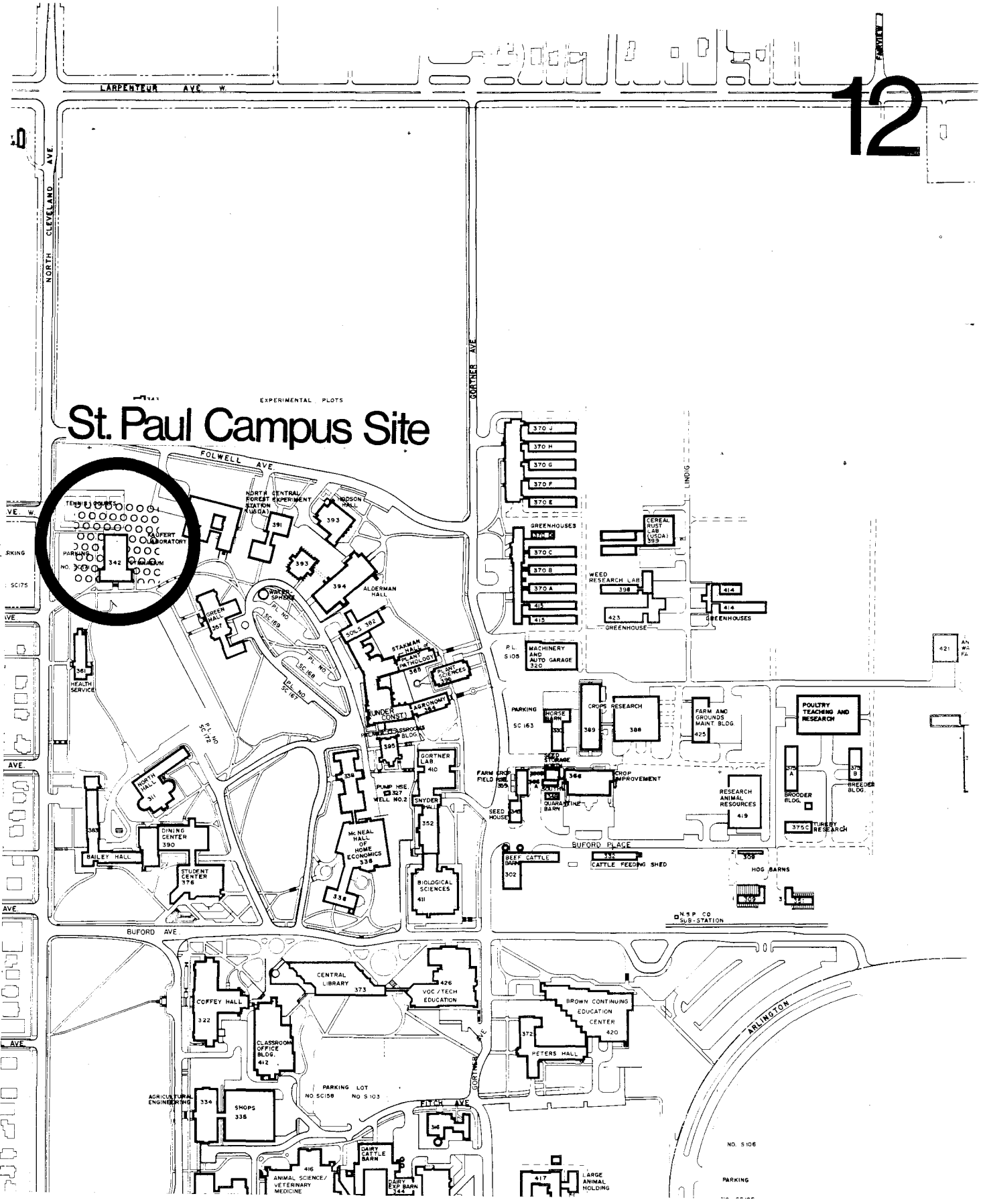
SITE ANALYSIS

ST. PAUL CAMPUS

SITE LOCATION (Figure 12)

The Recreational Sports Facility on the St. Paul Campus would consist of a swimming pool addition to the existing Gymnasium. The Gymnasium is surrounded by a contract parking lot to the west, active recreational open space (tennis courts) to the north, open space to the east, and sidewalk/active recreational open space (informal running track and intramural fields) to the south.

The following analysis examines the feasibility of constructing a pool addition west of the Gymnasium (Area 1), north of the Gymnasium (Area 2), and south of the Gymnasium (Area 3).



Recreational Sports Facilities Study

st. paul site

UTILITIES (Figure 13)

Utility locations play a major role in determining where it would be most feasible to construct an addition to the Gymnasium. The impact of an addition upon nearby utilities (and the associated costs) is broken down by area, starting with Area 1 west of the Gymnasium.

Area 1

° Steam Tunnels

Depending upon demand, the existing steam service could be upgraded at a cost of $40,000. If building construction requires steam line relocation, that cost would be less than $30,000.

° Sanitary Sewer

Replacement cost for the 6" sanitary sewer next to the Gymnasium would be minimal.

° Storm Sewer

A separated storm sewer would be required at a cost of $20,000, along with replacement of the existing 6" storm sewer at minimal cost.

Area 2

° Electrical

Underground electric in this area could be relocated at minimal cost.

° Storm Sewer

A separated storm sewer would be required at a cost of $20,000, along with replacement of the existing 6" storm sewer at minimal cost.

Area 3

° Steam

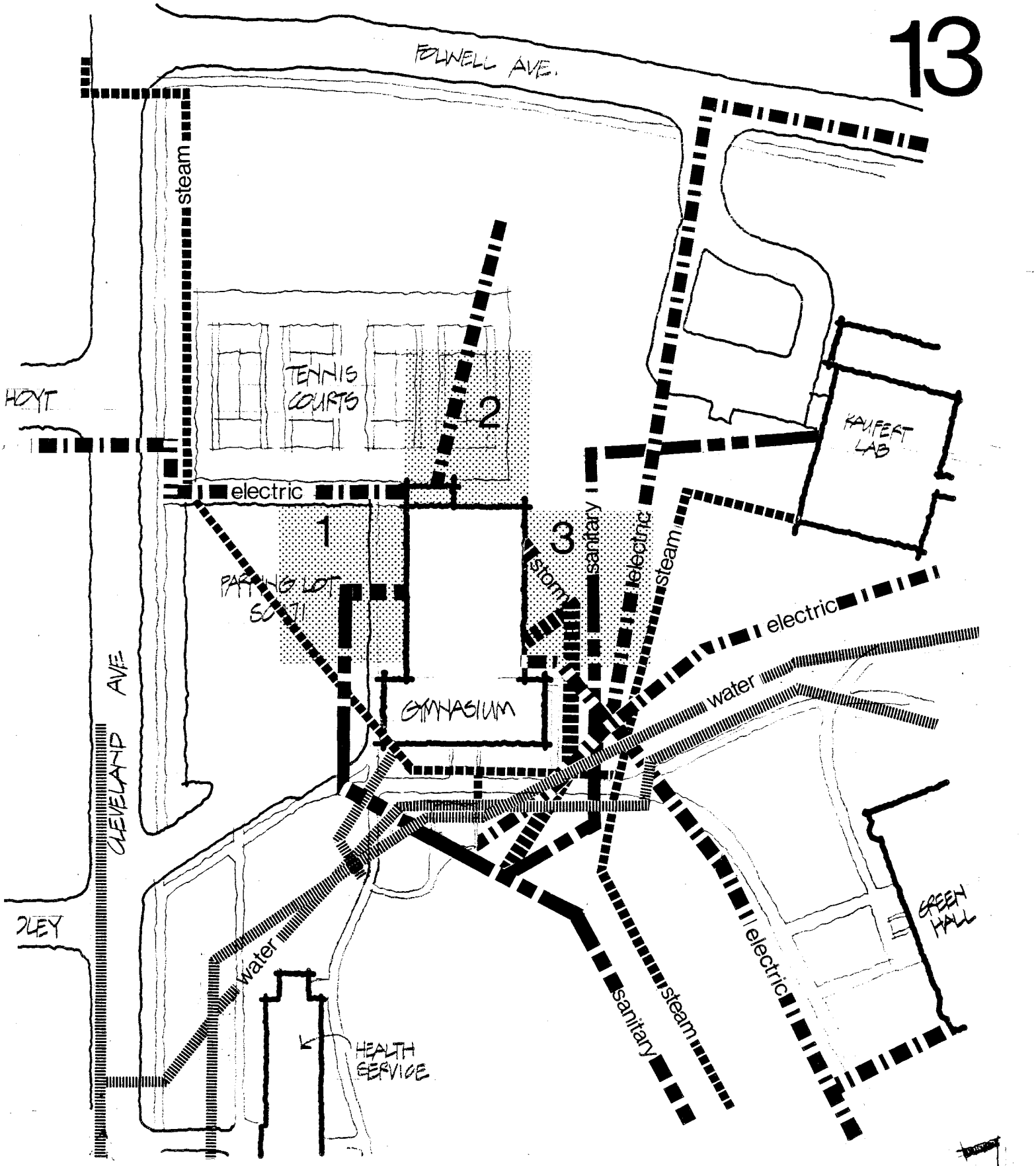
Any addition to the east of the Gymnasium should be designed to avoid disrupting the heat tunnel (floor elevation approximately 980) serving Kaufert Laboratory Building 387. This tunnel extends north/south approximately 80 feet east of the Gymnasium. Steam service for an addition east or south of the Gymnasium could be provided by a new connection from the heat tunnel for a minimal cost.

° Electrical

An addition in this area would require the relocation of the Gymnasium's transformer vault, a four barrel underground high voltage ductline, electric manhole, and the associated high voltage service. Cost: $185,000.

° Sanitary Sewer

Replacement of the existing 8" sanitary sewer would be required. Cost to reroute the sewer: $120,000.

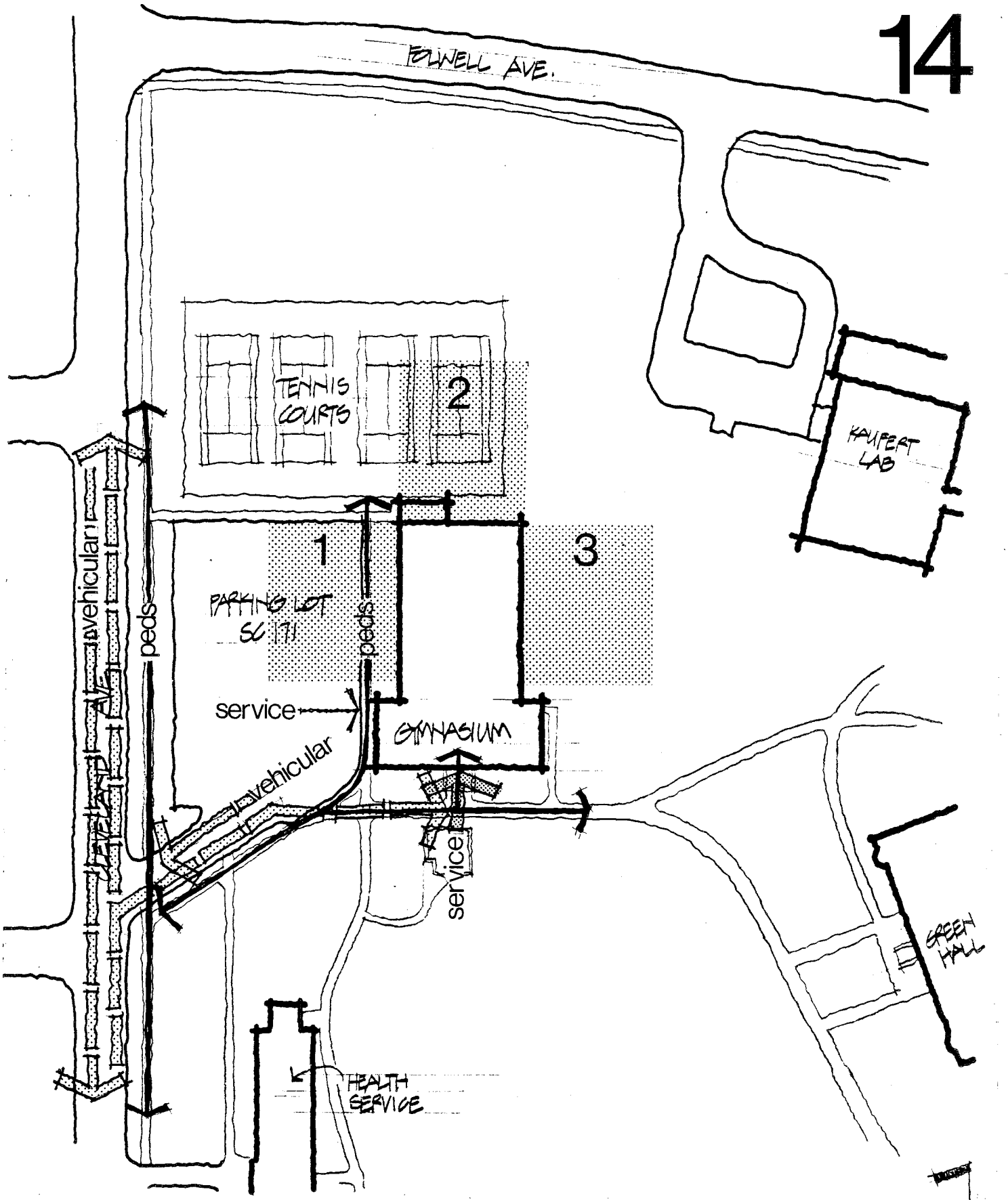

13
FOLWELL AVE.
steam
TENNIS COURTS
2
HOYT
KAUFERT LAB
electric
1
3
storm
sanitary
electric
steam
PARKING LOT
electric
water
GYMNASIUM
CLEVELAND AVE
GREEN HALL
water
sanitary
steam
electric
HEALTH SERVICE
Recreational Sports Facilities Study
St Paul Campus
utilities
HEATH
0 10 40

CIRCULATION (Figure 14)

The existing pedestrian flow pattern along the south side of the Gymnasium would not be interrupted by any development to the west, north or east of the Gymnasium.

User vehicular access to the site is from the west, off Cleveland Avenue. The Gymnasium is serviced from the west and from the sidewalk south of the Gymnasium.

If expansion occurs west of the Gymnasium, a portion of the existing contract/ metered parking should be retained to provide parking for service and official vehicles and for handicapped parking. These types of parking should also be incorporated into the existing lot if building expansion occurs to the north or east.



Recreational Sports Facilities Study

St Paul Campus

circulation

SITE ELEMENTS (Figure 15)

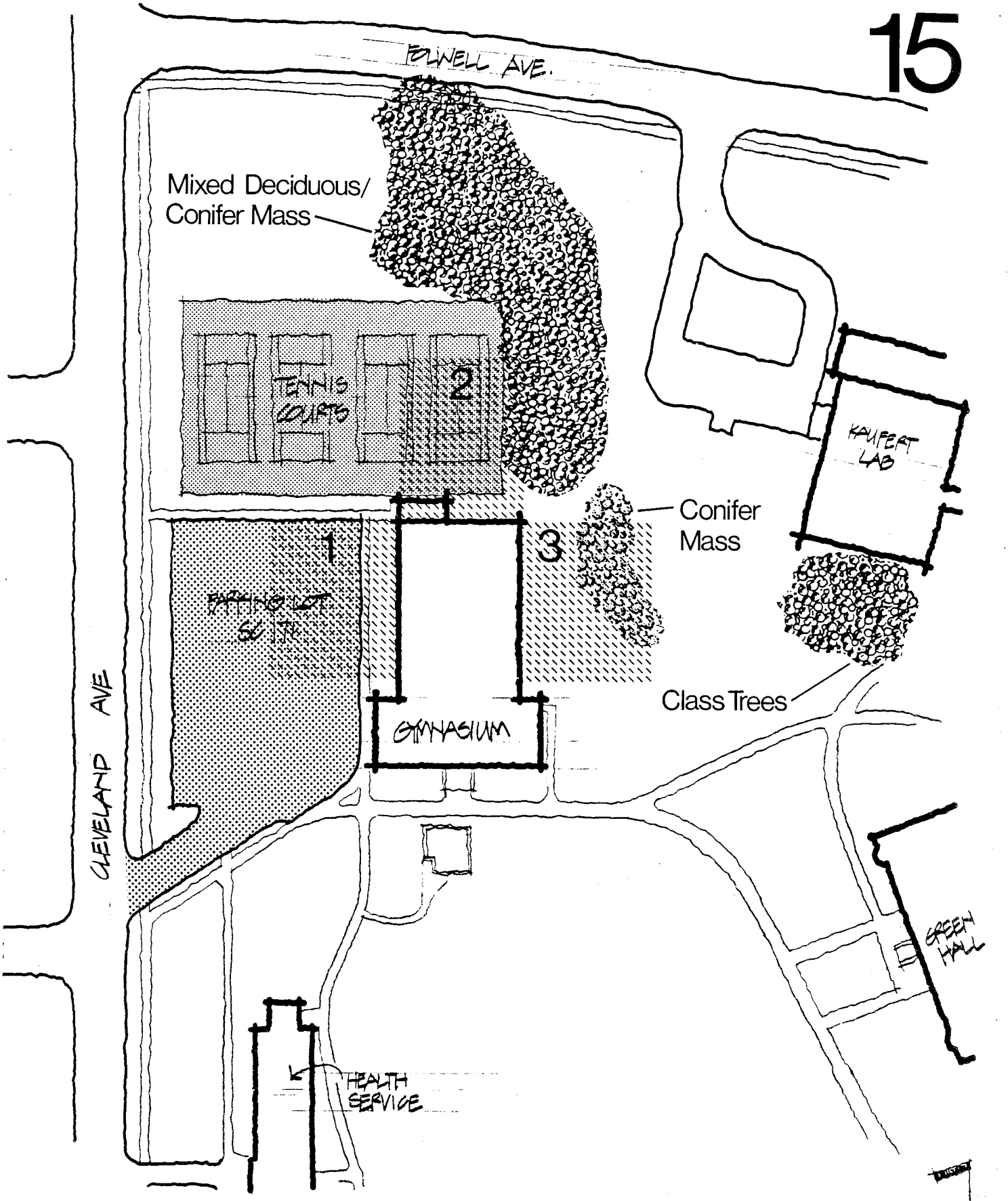
A pool addition to the Gymnasium would probably impact one or more of the site elements (features) shown in Figure 15.

Parking Lot SC 171 provides 79 parking spaces in an area of campus where parking is very limited. These spaces would be very difficult to replace elsewhere in proximity to the Gymnasium.

The tennis courts north of the Gymnasium are used by the Physical Education Department and for general recreation. Displaced tennis courts could be installed across the street in the vacant lot on the north side of Hoyt Avenue.

The mixed deciduous/conifer tree mass north of the Gymnasium is one of several on-campus tree masses which have always been important to the St. Paul Campus and its positive visual image. Care should be taken to minimize the impact upon this group of trees during possible construction in the area.

The mixed deciduous/conifer tree mass along with the conifer tree mass and class trees shown east of the Gymnasium are located in an area which the St. Paul Long Range Development Plan (LRDP) suggests should be preserved as open space. Also suggested in the LRDP is that building expansion should occur north and west of the Gymnasium with parking retained west of the Gymnasium at the south end.



Recreational Sports Facilities Study
St Paul Campus

site elements

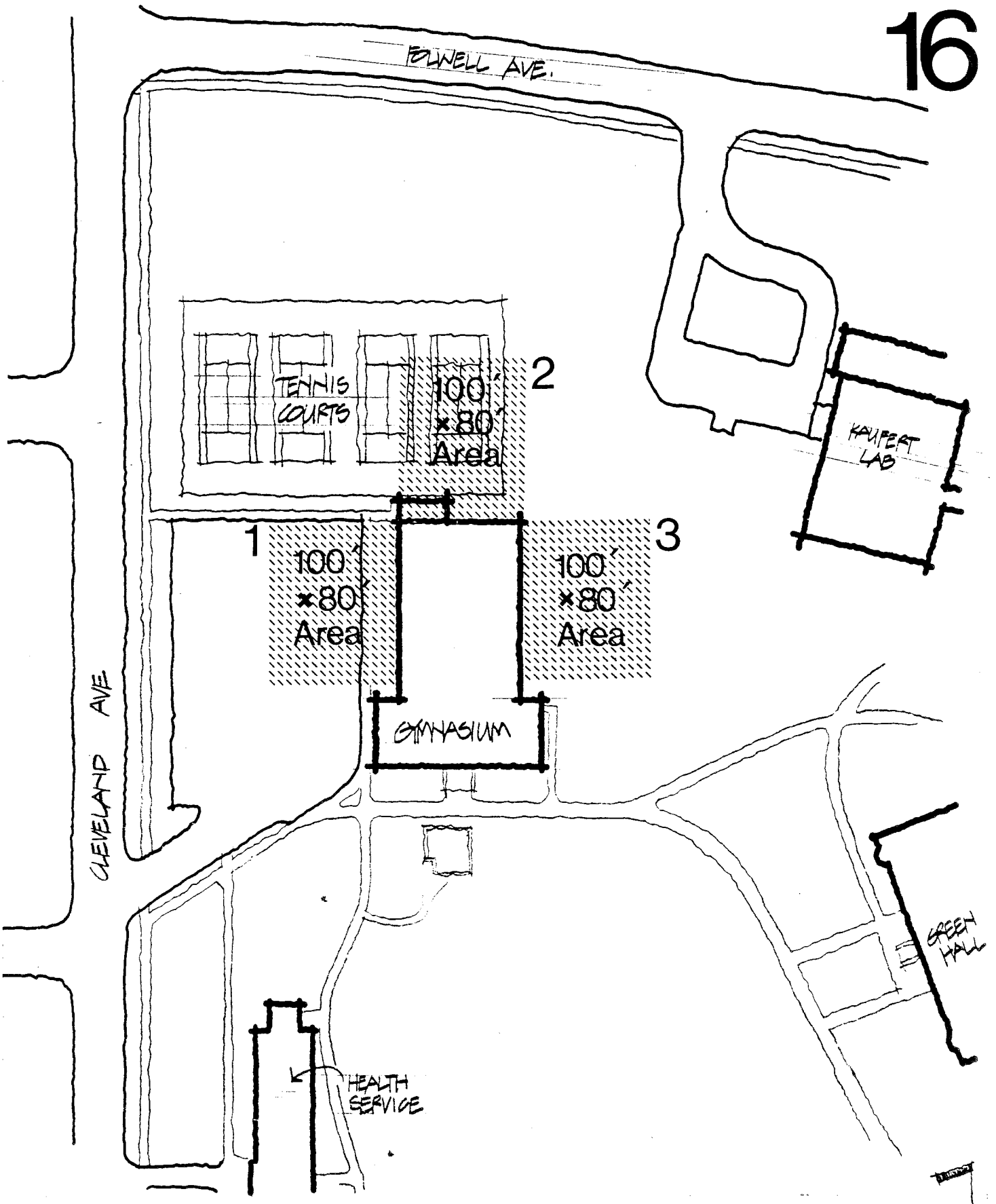
SITE AREA (Figure 16)

° Architectural Context

St. Paul Campus buildings reflect various architectural styles. No one style has become dominant, especially in the Gymnasium area of campus. A new facility should be integrated into the Gymnasium while reflecting building development which has occurred near the water sphere in the last ten years.

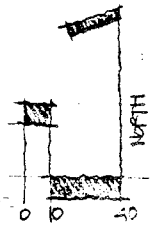
° Available Area

The square footage program requirements could be satisfied on the west, north or east sides of the Gymnasium.



Recreational Sports Facilities Study
St Paul Campus

site area



APPENDIX 1 - DEVELOPMENT COST SUMMARY

MINNEAPOLIS SITES

	FACILITIES IMPACTED	REPLACEMENT/ IMPACT COST	HOOK-UP COST
Site A (Recommended Site)	Sanitary Sewer	None	Minimal or $50,000 if connection to deep interceptor is required
	Steam Tunnel	If tunnel is disrupted ° $325,000 for temporary service ° $75,000 for replacement	Minimal
	Storm Sewer	° $30,000	Minimal
	Electric	° $85,000 for temporary service ° $40,000 minimum for replacement	None
	Water and Gas	None	Minimal
	Metered Lot (30 spaces)	° $1,000 per space	None
	Parking Lot C4 (60 spaces)	° $1,000 per space	None

Total Development Cost for Site A (recommended site): $245,000 - $695,000 plus minimal utility hook-up costs as noted.

	FACILITIES IMPACTED	REPLACEMENT/ IMPACT COST	HOOK-UP COST
Site B	Sanitary Sewer	None	Minimal
	Steam	None	$100,000 - $150,000
	Storm Sewer	None	Minimal
	Electric	None	$40,000 - $50,000
	Water	None	Minimal
	Gas	None	Minimal
	Parking Lot 36 (200 spaces)	° $1,000 per space	None

Total Development Cost Site B: $340,000 - $400,000 plus minimal utility hook-up costs as noted.

APPENDIX 2 - DEVELOPMENT COST SUMMARY

ST. PAUL

	FACILITIES IMPACTED	REPLACEMENT/ IMPACT COST	HOOK-UP COST
Area 1	Steam Tunnels	$40,000 to upgrade plus $30,000 maximum to relocate	None
	Sanitary Sewer	Minimal	None
	Storm Sewer	° $20,000	None
	Parking Lot SC171(79 spaces)	° $1,000 per space	None
Area 2	Electrical	None	Minimal
	Storm Sewer	° $20,000	None
	Tennis Courts (2-4 Courts)	° $20,000 per court	None
Area 3	Steam Tunnel	None	Minimal
	Electrical	° $185,000	None
	Sanitary Sewer	° $120,000	None
	Storm Sewer	° $20,000	None

Total Development Costs:

° Area 1: $169,000 plus minimal utility replacement costs as noted.

° Area 2: $60,000 - $100,000 plus minimal utility hook-up costs as noted.

° Area 3: $325,000 plus minimal utility hook-up costs as noted.

APPENDIX 3 - UTILITIES IN REMAINDER OF STUDY AREA FOR SITE A, MINNEAPOLIS CAMPUS (Figure 5)

° Sanitary Sewer

If the proposed building design requires the lowest floor elevation to be lower than the existing Cooke Hall floor, then a sanitary sewer connection will have to be made to the Metropolitan Waste Control Commission sanitary interceptor sewer tunnel (B) which lies outside the recommended building site. Approximate cost of this connection would be $50,000.

° Steam Tunnels (H)

If a new building is constructed over the existing heat shaft just west of the South Tower of the Stadium, the existing shaft would be abandoned and a new shaft would be constructed next to the deep heat tunnel near the southwest corner of the building site. Temporary steam service should be constructed before the building construction starts, but there is no feasible route for temporary steam line because of the size of the construction site. Therefore, it is recommended that a new steam tunnel be built from the relocated shaft north along the west side of Cooke Hall to University Avenue then east along the south side of University Avenue to a connection with the existing combination pedestrian and steam tunnel that crosses under University Avenue. In order to provide for an uninterrupted steam service, it would be imperative that the new building construction be phased so that the west part of the building is built first. The steam tunnel should be incorporated into the building design and included in the general construction. When the tunnel is complete, piping would be installed and put into service before building construction interrupts any of the existing steam tunnels or shafts on the east side of the construction site. A new service would have to be provided from the relocated shaft to the South Tower of the Stadium, and a new service would have to be provided to the North Tower of the Stadium. The tunnel would be widened along the east side of the Fieldhouse to allow for a future 16" water main that will connect the 12" water main around the Civil Mineral Engineering Building to the City 24" main in University Avenue

The estimated cost for the steam revisions is $850,000.

° Electric (I,J)

The following segments of the primary electrical distribution system could be disrupted by this building construction: Four barrel primary electric duct (I), a six barrel primary electric duct (J), a two barrel primary electric duct (G) that serves Cooke Hall plus two manholes located near the southeast corner of the building. The same six barrel electric duct along the west side of Cooke Hall including a manhole and the same six barrel primary electric duct and manhole at the northwest corner of the site could also be disrupted.

A new six barrel electric duct would be constructed starting at the existing duct line that crosses under University Avenue. From there it would run west along the south side of University Avenue, then south under the Fieldhouse floor then along the west side of the new building to a new splice chamber constructed near the southwest corner of the new building site. From there it

would continue eastward along the southside of the new building site and connect to the existing primary electric line that was interrupted. The new permanent duct line would have to be constructed and be energized before the existing system could be interrupted.

A temporary service from the new permanent primary electric system could be constructed through the construction site to serve Cooke Hall. This temporary service would have to be protected and incorporated into the new building.

The approximate cost is $1,000,000.

° Water Main (K,L)

The existing water service to Cooke Hall (K) could be disrupted by the new construction. A new water service for the new building and Cooke Hall could be taken from the 12" water main (L) east of the Civil Mineral Engineering Building. This line would serve as a temporary service to Cooke Hall and could be revised by the building contractor into a permanent service at a minimal cost.

V. general requirements

V. GENERAL REQUIREMENTS

CONSERVATION OF RESOURCES

Recognizing its social and economic responsibility, the University has a specific policy that physical facilities be designed with the objective of conserving natural resources, both in initial construction and in operation. Adherence to the State of Minnesota and Federal laws, regulations, and guidelines relative to conservation of natural resources, conservation of energy, and the water and air pollution standards is required in the design, construction, and operation of all facilities of the University. Particularly, systems, and materials of construction must be selected to minimize consumption of energy resources. Implementing this policy will require careful design of all construction components and systems to effectively use resources and to balance initial costs versus operating and maintenance costs. Balancing these factors, within a fixed budget, will challenge the ingenuity of professional consultants and University staff. The "University of Minnesota Standards and Procedures for Construction" offers certain specific guidelines and standards. The architect, however, is not to consider these measures limiting and is encouraged to consider other methods of energy and resource conservation and bring them to the attention of the Physical Planning Office.

LONG RANGE DEVELOPMENT PLAN

The Regents of the University of Minnesota have adopted in principle the Long Range Development Plan for the Twin Cities Campus-Minneapolis and have indicated that the strategies enumerated therein will be the basis for all future planning decisions for the campus. It will be the architect's responsibility to demonstrate that the building plan conforms to and implements the policies and concepts described in the Long Range Development Plan. The design of the facility and its site is to acknowledge and enhance the campus environment, extend and complement circulation patterns, natural features, and existing related facilities.

BUILDING REQUIREMENTS AND CODES

The facility is to be designed and constructed in conformance with the latest amended addition of the Minnesota State Building Code. The architect is to ascertain and comply with the applicable codes and regulations, such as OSHA and HEW requirements for access by the handicapped. The architect is to comply with the latest edition of the "University of Minnesota Standards and Procedures for Construction." If programmed requirements or other University standards are at variance with codes or regulations, the architect shall notify the University's Physical Planning Office.

SPACE UTILIZATION

The architect, during the course of the design, is to "test" the square footages stated in the program for individual spaces against how the necessary functions can be organized in the space. The intent of this is to meet adequately the functional requirements rather than to satisfy a theoretical space requirement.

Reductions or increases in square footage for a particular activity should not be made without the concurrence of the Physical Planning Office.

The architect is encouraged to bring to the attention of the Physical Planning Office areas where space can be utilized more fully if various functions can be combined or shared.

PROJECT SCHEDULE - TENTATIVE

Complete Facilities Program	January 1985
Start Schematic Design	January 28, 1985
Complete Schematic Design	April 29, 1985
Regents Information	May 1985
Regents Approval	May 1985
Complete Construction Documents	December 28, 1985
Review and Approval	January 28, 1986
Bidding	March 15, 1986
Construction Start	July 1986
Substantial Completion	September 1987

BUDGET - TENTATIVE

Construction Cost	$12,000,000
Non - Construction Cost	5,000,000
TOTAL PROJECT COST	$17,000,000