TO: James A. Henderson March 31, 1986
Richard R. Hough
John C. Kenefick
Richard R. Pivirootto

CC: Other Members of the Board of Trustees

Dear Messrs. Henderson, Hough, Kenefick, and Pivirootto:

As the Campaign for Princeton heads into its final stage, with every expectation of exceeding its goal by a generous margin, the time has come to consider the University's needs beyond those targeted in the Campaign. The Friends of Princeton Swimming want to call your attention to one such need.

Dillon Pool, now nearly forty years old, is the most heavily used athletic facility on campus. Even so, it does not adequately meet the many demands for its use. In 1981 the Friends submitted a report to the Administration documenting the multiple uses of the pool each day from 5:30 a.m. to 11:00 p.m. The report revealed inconveniences to many caused by the limited scheduling possibilities. For example, the women's water polo team had to practice late at night; varsity divers could not eat dinner at a normal hour; availability for exercise by faculty and students was restricted to a few hours per day during lunch periods. Aquatic activities such as intramural swimming and water polo competition, synchronized swimming, lifesaving courses, water aerobics, snorkeling, and general recreation were, and remain, severely curtailed. Furthermore, the pool has been completely shut down for prolonged periods in recent years owing to cracked tiles, leakage, and other defects.

Of special importance to the Friends is the potentially harmful effect of the pool's limitations on the quality of competitive swimming and diving, which have enjoyed a long and distinguished tradition of excellence at Princeton. Training methods have intensified so much in recent years that what was formerly a good practice facility is now no longer adequate. Harvard, Penn, Yale, Army, Navy, Brown, Columbia, and Dartmouth all have modern 50-meter or 10-lane pools. The Tigers have to train by swimming circles in each of six crowded lanes in a 25-yard pool. With the
addition of a women's team fifteen years ago, the sheer number of varsity swimmers—now more than 75 men and women plus 5 divers—makes it impossible for the whole team to work out together. This means longer practice sessions, greater fatigue, and more time away from studies. Dillon Pool, moreover, no longer satisfies minimum standards for championship meets; hence Princeton cannot now host Easterns or Nationals.

With President Bowen's approval and the direct involvement of Athletic Director Bob Myslik, the Friends hired an architect to prepare a feasibility study for a new pool to be sited adjacent to Jadwin Gymnasium. Completed in 1983 and revised in 1985, the study showed that a first-class pool could be built for approximately $6,000,000 if construction were started in the Spring of 1986. Obviously, the cost will get higher the longer construction is delayed, and probably $8,000,000 is a more realistic figure even now.

The Friends of Princeton Swimming, with more than 1,200 members, stand ready to help launch a drive to raise the funds needed to get the project under way. But we need the backing of the Board of Trustees in recognizing that a new pool must become a post-Campaign priority for the University. Unlike most athletic facilities, a pool would serve everyone in the University community. A modern, Olympic-size pool supplementing Jadwin Gymnasium and Princeton's other superb sports facilities would give the University an athletic complex the equal of any in the nation.

We are counting on your enthusiastic support to make the pool a top priority, so that we can put our plan into effect just as soon as the Campaign is over on June 30.

Sincerely yours,

William F. Haynes, Jr.
President, Friends of Princeton Swimming

P.S. A copy of the feasibility study is available upon request. A copy of the architect's rendition is enclosed.
REPORT TO THE ADMINISTRATION
OF PRINCETON UNIVERSITY
ON THE NEED FOR AN EXPANDED AQUATIC FACILITY

SUBMITTED BY
THE FRIENDS OF PRINCETON SWIMMING
JANUARY 1981
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ABSTRACT

Swimming is important to many people pursuing a variety of goals—competitive, therapeutic, educational—and the evidence presented in this report shows that Dillon Pool is no longer adequately providing for the university's needs. (Section 1)

The limitations of Dillon Pool, despite efforts by the Friends to help keep it up to date, are becoming increasingly plain as the demands on its use rise and as comparison with facilities at other EISL colleges reveals; and recent surveys prove that even the long hours currently scheduled do not come close to providing enough time for all those individuals and groups who want access to it. (Section 2)

Competitive swimming, for both men and women, has been one of Princeton's most successful sports over the years, but it is suffering from the constraints that Dillon Pool imposes on the efficient application of modern training methods. (Section 3)

The level of unmet demand for other uses of the pool—recreational swimming, instructional activities, club sports—is significant and helps emphasize how difficult it is with only the present facility to accommodate the diverse interests of people in the university. (Section 4)

Groups not officially affiliated with the university, such as the Princeton Area Masters and the "Flying Fish," have much to contribute to the swimming program at Princeton, and the university in turn has much to gain, in enhanced good relations with the surrounding community, from renting the pool to such groups. (Section 5)

The number and diversity of competing demands for pool time make clear the need for an additional, not just extended, facility; and preliminary investigation suggests that a new 50-meter pool laid out parallel to the present one in Dillon would be the most economical realization of the goal of providing a facility to meet all needs now and in the future. (Section 6)

Therefore, the Friends of Princeton Swimming strongly recommend that provision be made in the new capital campaign for construction of an expanded aquatic facility. (Section 7)
1. INTRODUCTION

"Swimming is the most universal of our sports, the unique all-purpose exercise. Since children are now being taught to feel at home in the water even before they walk, swimming can be done almost from the cradle to the grave. Building a swimming pool may thus be as wise an investment for our collective health as putting up another intensive-care unit at a hospital."

This statement concludes an article that appeared earlier this year in the Sunday New York Times Magazine (see Appendix A) wherein the author sketches the dimensions of the phenomenal growth in the popularity of swimming in recent years that may make it "replace running as the sport of the 80's." It sums up well the basis for the case that we, the Friends of Princeton Swimming, want to make here for the many benefits we feel the university can gain from the expansion of its present aquatic facility in Dillon Gymnasium. For, unlike other sports, which require a physical structure serving little or no purpose beyond the competitive activity itself, swimming is a mode of exercise that can be made to serve a wide variety of ends--competitive, therapeutic, educational, and even lifesaving--and a pool can thus provide for many needs of a very substantial part of the university and surrounding community's population.

Testimony from a broad spectrum of users and interested parties--undergraduate and graduate students (Appendix B), faculty (Appendix C), medical staff (Appendix D), parents and alumni (Appendix E), as well as visitors to the university (Appendix F)--persuades us that Dillon Pool can no longer meet the demands for multiple and increasing use being made on it. For reasons that we trust this report will make clear, an additional facility of Olympic size is sorely needed.

2. DILLON POOL, PAST AND PRESENT

History. The pool in Dillon Gymnasium was first opened on September 13, 1948, and officially dedicated at a ceremony on December 11 of the same year. It was a vast improvement on its
predecessor, Brokaw Memorial Pool, a bathtub-like structure of ancient design that had been razed in the spring of 1946, two years after a fire had destroyed the old gymnasium. Compared with Brokaw Pool's four lanes of six-foot width, Dillon Pool has six lanes each measuring nine feet across, and it affords much more space for spectators, with seating capacity for 800 and standing room for 300 more. It also can accommodate two one-meter and two three-meter diving boards at the deep end and has a bulkhead (no longer operable) at the shallow end that once allowed for setting the length of the racing course at either 20 yards, 25 yards, or 25 meters. A superb facility when originally constructed, called "the finest indoor swimming pool in the country" by the Princeton Alumni Weekly (September 24, 1948), Dillon Pool is still basically adequate for dual-meet (though not championship) competition and for other uses—up to a point. Over the years contributions from the Friends have helped keep it as up to date and serviceable as such peripheral improvements as installation of electronic timing, improved overhead lighting, and a new PA system can make it. But there is no denying that inherent limitations of space and physical structure are causing it to become increasingly antiquated by modern standards and in comparison with facilities at other institutions in the Eastern Intercollegiate Swimming League (EISL). It is also incapable of satisfying its many users, who are both more numerous than ever before and more diverse in the interests that lead them to make demands for time in the pool.

Pools at other EISL colleges. Within the past decade new pools have been built at Army, Brown, Columbia, Dartmouth, Harvard, and Penn. All but Columbia's (which has eight wide lanes) are 50 meters long by 25 yards wide and have either a separate diving tank or an L-shaped extension where diving can be segregated from the swimming lanes. Harvard opened its new $4 million facility in 1978 and played host for the NCAA Championship in 1980. Even some of the older facilities are better able to keep up with increasing demands and modern training methods than Princeton's. The Payne Whitney Gymnasium at Yale, for instance, houses both a
25-yard racing pool and a separate 50-meter facility, and Navy has a 50-meter pool, too.

**Present use and unmet demand.** The current schedule for Dillon Pool laid out on the following page shows how long each day it is already being used—from 5:30 in the morning right through 11:00 at night during the week. It also hints at what is becoming an increasing problem—the need to accommodate different activities at the same time, such as instructional and recreational swimming, which have to compromise with each other on the space available for their respective pursuits. But it does not reveal other important facts. One is the number of people participating in these various activities. A tally taken by lifeguards in 1979, for instance, provided the information that, on average, 132 persons swam in the pool each weekday from 9:30 a.m. to 2:00 p.m., with as many as 60 using it at the same time. More crucial, though, is what we know about how much additional use would be made of it if more time (meaning an expanded facility) were available. This derives from two sources. First, repeated requests have come directly to the swimming coaches from various groups and individuals both from within and from without the university who want access (or more access) to the pool for their activities, ranging from the most basic (swimming for the handicapped) to the most specialized (kayaking). Second, a survey conducted by the Friends late in the spring of 1980 not only lent further credence to the complaints that there are interests in using the pool for different purposes that are currently being frustrated but also suggested that even those students and faculty who use the pool now would make significantly more use of it if the hours were not so restricted—about double the amount for the three groups polled—and that some 30% more undergraduates and 25% more faculty would use the pool than the number using it at present (see Appendices B and C). Finally, it should be pointed out that, with the pool in such constant use and only one pool available, such a basic function as keeping it clean is difficult to perform; the custodian has a legitimate gripe that the schedule now does not allow any convenient time for the job, which has to be done either at the crack of dawn or close to midnight!
**Schdlue for Dillon Pool**

WMP = Women's Water Polo Club
VST = Varsity Swim Teams (Men and Women)
VTG = Varsity Diving Teams (Men and Women)
SP = Swim for Fitness Class
RS = Recreational Swimming
PM = Practice Area Masters
PP = "P-T" Age Group Swim Team
BS = Beginning Swimming Class

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Sunday
3. COMPETITIVE SWIMMING AND DIVING

Early years at Princeton. Swimming as a competitive sport has had a long and often glorious history at Princeton. Emerging originally in tandem with an interest in water polo (a sport that has experienced a remarkable renaissance in recent years), competitive swimming first became organized on the varsity level at Princeton in the spring of 1904, eight years after the Brokaw Pool was built, when a fledgling squad of twenty-five men rashly took on the boys from neighboring Lawrenceville School after practicing for only two weeks—and promptly lost every event! The shock of that humiliating defeat submerged the team for another year, but it reappeared early in 1906 and had the satisfaction of upsetting Yale 41-23 in the first collegiate meet Princeton had ever swum. With the formation of the Intercollegiate Swimming Association in November 1906 by Brown, Columbia, Harvard, Pennsylvania, Princeton, and Yale, competition began on a regular schedule and Princeton had the honor of winning the first league title by going undefeated in 1907.

Men's record. Over the years since then the men's varsity has been one of the most successful of Princeton teams in intercollegiate competition. The records of these coaches speak for themselves: 162 wins in 228 meets (.711) for Howard Stepp, 1928-1953; 105 wins in 149 meets (.704) for Robert Clotworthy, 1959-1970; 78 wins in 99 meets (.787) for William Farley, 1971-1979. Twice, in 1924 and 1938, Princeton had the distinction of putting an end to long winning streaks of traditionally powerful Yale; and in 1962, the first year that the Kiphuth Bowl honoring Yale's famous coach was awarded to the winner of the Eastern Seaboard Championship, Princeton snatched it away from heavily favored Yale. Since 1962 Princeton has been the champion or runner-up at the Easterns in eleven of the eighteen years, winning the title six years in a row from 1973 through 1978. Princeton has also had its share of superstars: Olympic medal winners Albert Vandeweghe (silver, 1936), Jed Graef (gold, 1964), and Ross Wales (bronze, 1968); world record holders Richard Hough and Jed Graef; and national champions too numerous to list here.
Women's record. This fine tradition established by the men is rapidly being approached by the women. First appearing on the scene in 1971, when a single swimmer and a single diver teamed up to score enough points for fifth place for Princeton at the women's Easterns, women's swimming won official status the following year, when it swept through its first season undefeated and took third in the Easterns. The next year a squad of six managed to capture third place for Princeton at the national championships, setting three national records in the process. As women's collegiate swimming grew in popularity and athletic scholarships proliferated at non-Ivy schools, Princeton's fortunes on the national level waned. But it has remained one of the East's best teams, winning the championship three times and taking second another three in the past eight years. And the overall record it has achieved in dual meets, 63 wins in 75 meets (.840), is nothing less than phenomenal!

Effects of Dillon Pool's limitations. While the success of women's swimming at Princeton has been gratifying, it has helped exacerbate a problem that was already becoming acute. Training methods for swimmers have changed markedly in the past fifteen years. Whereas even as late as the mid-sixties a swimmer at Princeton would typically have to devote only an hour and a half each day during the week to practicing and would normally not cover much more than 3,000 yards, today it is standard for a swimmer to spend three to four hours in the pool daily (including weekends) in two separate workouts where the average total distance logged is at least 10,000 yards. In order to train most efficiently, a swimmer must be able to exert close to maximum effort over many of these yards and therefore must have sufficient room in a lane to maintain pace and avoid overtaking, or being overtaken by, another swimmer whose pace is different. Where space in the pool is limited, either the swimmers have to be divided into separate workout sessions with two swimmers in a lane, or more than two swimmers (sometimes as many as nine) have to swim a circular pattern in each lane, thus either slowing the pace or risking injury from collision when attempting to pass. Under the latter conditions the quality of the practice suffers. The necessity of maintaining quality hence
has the effect of increasing the amount of time the pool is needed for team practice. The more swimmers there are, the more time is required. The introduction of a women's team at first had only a minimal impact because the number of women involved was so small. But in just one year, from 1978 to 1979, its size more than doubled and it now has nearly as many members as the men's team. The coaches are naturally having some difficulty providing high-quality workouts for their sixty swimmers. Most frustrating of all to them is the impossibility of having the whole team get together in the pool at one time; as one of the coaches recently observed ruefully, some of the new swimmers do not yet know other people on the team! The divers and their coach suffer, too, from the inadequate space and time available for practice. Since they do not enjoy the privilege of a separate diving tank, now common in modern pool complexes, they must make do with the inconvenient hours allotted to them, which prevent them from having dinner at a normal time during the week and are barely sufficient for the practice they need in any case. Finally, for divers and swimmers alike, the lack of another pool in which to warm up before events in a meet and loosen up afterwards, while the meet is going on, is a decided disadvantage.

4. USES BY OTHER UNIVERSITY GROUPS

Recreational swimming. The current schedule, for the reasons just noted, is dominated by the use that the men's and women's teams make of it for their practice. Whatever time is left over during normal daylight hours is allocated to general swimmers and to lessons for beginners, who usually have to share the pool between them at the same time. It is clear from comments volunteered by students and faculty who responded to our survey last spring that many consider the current conditions for recreational swimming unsatisfactory. "If the pool were less crowded, I would swim more often," said one faculty member; and another complained, "Pool hours are absurdly short." A professor visiting from another university, which has a new Olympic pool, "used the pool twice and was ... shocked at the way in which it is run and surprised that the university community tolerates these conditions"
(see Appendix F for his full letter). The therapeutic value of swimming is very important to some individuals, especially among the faculty; as one put it, "swimming is essential to my health—it's more than recreational." (See Appendix C for more extensive comments.) The level of unmet demand for this use of the pool can be gauged from the summary results of the survey reported in Appendices B and C. There one can see that both students and faculty would be inclined to increase the time they devote to swimming, on average going about two more days a week to the pool than they do now, if it were available at more convenient hours. Strikingly, undergraduates seem to be least well served by the present schedule for general swimming, and for all groups the period most desired, between 4 and 6 p.m., is precisely that which is open to none except the varsity teams. Our survey shows that unrestricted availability would mean an increase in the number of undergraduates and faculty using the pool by a factor of nearly one-third and one-fourth respectively. Clearly, the addition of a new Olympic-size pool, which would fully meet the needs of the varsity teams and even reduce the number of hours they would need for practice by providing more lane-space for each individual swimmer, would at the same time free Dillon Pool for many more hours of general swimming. This would include time for family swimming, which faculty specifically requested in the survey. And at least some frustrated divers could pursue their interest, too, whereas they cannot now at all.

**Instructional activities.** More instruction of various kinds could be offered besides. At the moment it is pretty much limited to helping nonswimmers learn a few fundamentals and to giving one lifesaving course a year. There is need for more, and the demand exists. As one undergraduate said, "I didn't really know how to swim well when I came to Princeton even though I passed the swim test. I had to get a friend to teach me the basics so I could swim for exercise. If there were some kind of short course in basic strokes, it would be great for the school." The coaches have received requests for intermediate and advanced swimming classes as well, and a new class in swimming for fitness was added this year as a way of partially meeting the demand. Another undergraduate called for "a wider offering of lifesaving courses at
different times," including Water Safety Instruction (WSI). Special classes for the handicapped have been urged, too. One might note here that there are undergraduates, including members of the teams, who would be qualified to give such instruction, and this would provide another opportunity for students to work their way through school in a very useful fashion.

Water polo and other sports. Beyond these general and instructional uses, there exist a whole range of more specialized interests that are now being accommodated only partially or not at all. A men's water polo club was organized in 1977, and it has met with considerable success, winning the Eastern Intercollegiate Championship for Division II in 1979. But the only time that it could get the pool for practice was after 8 p.m. Last year a group of women tried to organize a water polo club, too, and they had to accept an even later time at night, after 10 p.m. Intramural competition in swimming and water polo, once very keenly pursued at Princeton, engaging more people than the varsity teams, has in recent years become virtually extinct for lack of access to the pool. More than one undergraduate responding to our survey pleaded for "greater intramural activity for those of us frustrated competitors!" Several respondents wanted to be able to take scuba lessons in the pool, and others expressed interest in synchronized swimming (water ballet). Finally, one graduate student wrote about his frustration in getting time in the pool for his unusual pursuit: "During the last 2-3 years I have been involved with trying to obtain pool use for kayak rolling practice and teaching, through the Outdoor Action program. We have had extreme difficulty in obtaining use of the pool and even paid substantially to use the Lawrenceville School's pool on occasion. It would be welcome to have more time available and more open attitudes on the part of pool administrators towards special uses like this." A new pool, needless to say, would make it possible to accommodate such diverse interests as this more readily.

5. USES BY NONUNIVERSITY GROUPS

Masters swimming. Age-group swimming has been well organized in the United States for many years, under the auspices of the
Amateur Athletic Union, and it is largely responsible for producing the fine crops of young swimmers that have brought the U.S. to such international prominence in this sport. But until ten years ago it was confined to American youth. Then, in 1971, the AAU accepted an invitation to sponsor meets for masters (who are divided for competitive purposes into five-year age groups from 25-29 all the way through 85-and-over), and a whole new world of swimming opened up. As the article from the New York Times (Appendix A) testifies, masters swimming has experienced tremendous growth over the past decade and now threatens to overtake running as the most popular sport for the older generations.

Locally, masters swimming got its start very early when "Tink" Bolster organized a small group of area residents and university employees to practice along with the younger age-groupers in Dillon Pool in 1972. The group soon went its own way, adding more and more people from within and outside the university (totalling nearly 150 over the years), and arranged to pay rent for use of the pool at a designated time very early in the morning (currently 5:30 to 6:30). Now it runs a year-round program, using the Community Park pool during the summer and involving some thirty adults ranging in age from 25 to 65 (including faculty and staff of the university and, at present, a visiting member of the Institute for Advanced Study from Australia). For several years it also sponsored the East Coast Masters Invitational Meet, which drew up to 300 competitors for a three-day series of events in Dillon Pool early in May. Besides serving as an example of what a continuing regimen of rigorous exercise can contribute to life, the group in addition supports the competitive swimming program at Princeton by making a generous donation each year to the Friends.

There is every reason to believe that masters swimming, nationally and locally, will continue to grow in popularity, and a new pool at the university could help foster this healthy trend by providing more flexible scheduling to attract more than the handful of hardy souls who are willing to give up sleep to practice at the current ungodly hour.
Youth age-group swimming. Younger age-group swimming is an important adjunct to any collegiate swimming program, and over the years the coaches at Princeton, like their counterparts everywhere, have been actively involved in working with age groupers locally and elsewhere (during the summer). Robert Clotworthy, just to give one notable example, coached local resident Leslie Bush, who went on to win the gold medal in the 10-meter tower diving competition at the Tokyo Olympics in 1964. (She later served as diving coach for Princeton's team for a couple of years in the mid-seventies.) Currently, Rob Orr oversees the "Flying Fish," a group of some thirty young area swimmers who work out five evenings a week in Dillon Pool. But because of the constraints of time and space, they are compelled to squeeze into only three lanes during the same period that the varsity divers are practicing. There is more potential for the university in income-producing involvement in this area, as the success of Frank Elm's program at Rutgers has demonstrated.

Rental possibilities. Other groups outside the university have from time to time inquired about renting the pool, too. An expanded facility would make possible not only more satisfactory service to the university community but also profitable extension of a much desired resource to a wider population that would surely bring long-term benefits in better town-gown relations.

6. DESIGN FOR A NEW POOL

Need for a separate pool. As the number and diversity of the competing demands for use of Dillon Pool described above suggest, it would not likely be sufficient just to enlarge the size of the present pool, even if that were structurally possible. Too many of the activities require exclusive or nearly exclusive use of the pool for their satisfactory pursuit, and right now there is not time enough to accommodate them all without inconveniencing or frustrating many. A new pool would, as Jadwin Gym did for Dillon Gym, free use of Dillon Pool for many of these worthwhile activities at more convenient hours and would increase the level of participation substantially, while also providing the kind of training facility that a collegiate swimming team these days requires for maximum performance—not to mention the psychological and social
benefits to the members of knowing all their teammates and feeling part of a single team!

Type of facility envisaged. In the mid-sixties, when the Jadwin complex was being planned and built, there was some consideration given to including a new aquatic center as part of it, and a design for a "dream pool" was actually commissioned (see Appendix G). This would be an ideal solution, but realistically we do not expect that current conditions would allow for its realization--although hope never dies. We do believe, however, that a more modest proposal would be feasible. Preliminary investigation, which we have pursued with as much technical sophistication as we currently have at our disposal, suggests that it would be possible to build a pool 50 meters long by 25 yards wide, perhaps with a separate diving tank, parallel to Dillon Pool in the space immediately adjacent to it. A single filtering and heating system could be used to service both Dillon and the new pool, and few if any additional locker rooms or coaches' offices would need to be constructed. We have a general idea of the costs involved for this kind of facility, which we have gained in talking with pool contractors, although of course a detailed study would be necessary to obtain precise estimates.

7. CONCLUSION AND RECOMMENDATION

It is our firm belief that the university would have much to gain, from many different points of view, by undertaking the construction of a new pool. Dillon Pool is undoubtedly the most heavily used, and overused, athletic facility in the university, and even so it clearly cannot meet adequately all the demands for use of it that now exist and that will surely continue to grow. The need for a new pool is obvious. The time for appropriate action to raise funds for it is now. We therefore strongly recommend that provision be made in the coming capital "Campaign for Princeton" for the construction of an expanded aquatic facility.
By Sol Stern

You didn’t see it on “Wide World of Sports,” but a national championship swimming meet, sponsored by the Amateur Athletic Union, was held recently in Fort Lauderdale, Fla. It was an event of record-shattering performances, and demonstrated, as well, that high-level competitive swimming — contrary to popular perception — is not the exclusive preserve of our nation’s teen-agers. Entered in the three-day meet were about 1,600 of the best “masters” swimmers from around the country — men and women aged 25 to 87 who have proved themselves in scores of local contests during the past year. Races were conducted in all the standard swimming events — freestyle, backstroke, breast-stroke, butterfly and individual medley — and swimmers competed against others in the same age bracket. (For example, a 50-year-old woman would compete only against other women in the 50- to 54-year-old age group.)

This annual event is as much a symptom of the physical-fitness craze of the last decade as was the growth of long-distance running. The difference is that the development of swimming as a sport for adults has been almost entirely by word of mouth. There have been no best-selling books by swimming “gurus”; no inspirational television movies about middle-aged housewives taking up the challenge of long-distance swimming; no corporate funding and support of swimming meets.

Yet for all the news-media coverage that running has been accorded, there may actually be a silent majority of Americans who are opting for swimming as their preferred form of exercise. A 1979 national poll on the fitness phenomenon by the Louis Harris organization cited the figure of 28 million adults who swim on a “regular basis” at some time during the year. (The comparable figure for running was 17 million.) Even discounting the inflation of this statistic by those who are only “summers-time” swimmers, it still is likely that the number of serious, year-round swimmers is well into the millions.

At health clubs and Y’s all over New York City, the trend toward swimming for conditioning is very noticeable. People who frequent the clubs report not only increased use of the pools, but also a marked shift toward serious lap swimming, away from the kind of recreational dips that used to be common. For example, at the Park Swim Club, on Manhattan’s West Side, the pressure became so great that management had to institute a system of prior reservations for lane time, in the same manner that court time is reserved at tennis clubs.

One sign that swimming may emerge as the sport of the 80’s can be detected on publishers’ row, where editors are always on the alert for trends. For the first time, four major publishers now have books in the works on swimming for physical fitness.

Not much is needed to persuade the average person that swimming is, generally speaking, a healthful activity. Almost everyone has an acquaintance who swims, or has heard of someone with back problems or a knee injury who was sent by the doctor to a pool for rehabilitation. Perhaps the most publicized recent case was that of the basketball star Bill Walton, who was put on a swimming recovery program after his million-dollar foot injury.

Swimming has been cited by researchers as being beneficial in the treatment of mental stress, anxiety and depression. There appears to be something in the rhythmic quality of swimming, in the feeling of weightlessness, that promotes relaxation and a sense of well-being. One woman in her 40’s tried to explain to me why she swims almost every day — despite the fact she isn’t very good at it — and said: “I like the sensual feeling of it, and the afterglow after a swim.”

If for no other reasons than these, it would always be worth anyone’s price of admission to a swimming pool. But there is a powerful case for swimming that is being made by medical experts, who say that swimming is more than just therapeutic and relaxing. They say that swimming can be a lifesaver — in that it is the best cardiovascular condition we have.

Dr. Ransom J. Arthur, dean of the Medical School, University of Oregon, was the person who was probably most responsible for encouraging the development of swimming for physical fitness during the last decade. In the late 1960’s, Dr. Arthur was engaged in research that measured the effect of exercise in the prevention of coronary disease. A swimmer himself, he became convinced that vigorous swim training was the ideal exercise for cardiovascular conditioning — particularly for the middle-aged and the elderly. He also concluded that a program of competition could easily be tolerated by older swimmers, and that it could provide an important stimulus in encouraging higher levels of fitness.

Dr. Arthur then persuaded the Amateur Athletic Union to start sponsoring masters swimming meets in 1971. In a decade of steady expansion, the program has more than justified his expectations. More than 6,000 swimmers are now in competition (the oldest known racer is aged 88) and there are masters swim clubs in every major region in the country. A monthly magazine — Swim Master — publishes meet results, tips on training techniques and features on some of the swimmers. The presence of masters swimmers in pools all around the country seems to have had a ripple effect — encouraging many others who are not in competition to upgrade the level of their training.

Dr. Arthur’s contention that older swimmers can train themselves to a very high level of performance has certainly been demonstrated. Looking through a copy of Swim Master recently, I noticed that a 55-year-old professor at West...
 Ranked as one of the top long-distance swimmers in her age group, Miss Bein has derived a sense of personal accomplishment from masters swimming that, she says, has helped her to deal with the problems of adjusting to her retirement years, and combating bouts of depression. Mentions her upcoming elevation to the next-higher age bracket (thus, probably, enabling her to achieve higher ranking) she joked: "I never thought I would be looking forward to my 70th birthday." But, joking aside, Miss Bein actually is convinced that swimming saved her life.

In the past 10 years, she has had two serious lung operations. Along with her physician, she was deeply concerned about the prospect for a full recovery. Then, in a conversation about a possible program of rehabilitation, she mentioned to her doctor that she had done competitive swimming in her youth. Picking up the hint, he suggested that some recreational swimming might be therapeutic. Miss Bein agreed to give it a try.

Thus, at the age of 60, Miss Bein launched her second swimming career. Starting off very gingerly, she gradually built up to swimming more than a mile a time. Soon she discovered that the more she swam, the better she felt. Her swim workouts became as natural a part of her daily routine as essential to her sense of well-being as eating breakfast is to most people. And for years now, she hasn't been troubled by any ailments more serious than an occasional cold.

"Swimming has been very good to me," she says. "Physically and psychologically I don't think I could have survived without it. If I didn't swim I'd just be another old woman. But I feel so young when I swim. A fantasy perhaps, but it keeps me going."}

Running's powerful lure is that everyone knows how to do it, that it costs next to nothing (other than the price of a pair of sneakers) and that it can be done anywhere. At the start, swimming is much more problematical. You have to know at least one of the swimming strokes, and then you have to get to a pool. If you're not lucky enough to be associated with a university, finding the right pool can be expensive: In New York City, annual memberships in swim clubs are running from $350 to $400.

The investment will be well worth it, however, when you consider swimming's greatest advantages: It powerfully exercises all the muscles in the body, it is a virtually injury-free sport. Swimmers just don't get tennis elbow, or shin splints or foot injuries. Practically speaking, this means that swimmers are not forever writing checks to orthopedists, podiatrists, and chiropractors. Indeed, it is often the case that medical men refer their running patients to the swimming pool for rehabilitation.

Another significant benefit of swimming derives from the cooling effect of water on body temperature. Most public pools, maintained at a temperature of about 77 to 80 degrees Fahrenheit, which is comfortable enough yet permits the body to be continuously cooled down during a prolonged, hard workout. Swimmers can thus train at a high level of intensity without suffering the heat exhaustion and dehydration that plague some long-distance runners — particularly in the summer months. For a graphic illustration of this phenomenon, observe a swimmer who, after a long, hard workout, lifts himself out of the water and walks away looking as fresh as if he had just stepped out of a shower.
“Vigorous” is the operative word here. Because of the buoyancy factor, swimmers can sometimes cheat themselves, believing that they are getting into condition when, in fact, they are not. For the most part floating across the pool. The older, untrained swimmer can make sure that he or she is getting a conditioning effect by checking the pulse. The target during exercise, according to Dr. Zohman, is to elevate the pulse rate to 70 percent to 85 percent of the “maximal heart rate”—which can be calculated roughly by subtracting one’s age in years from the number 220. For example, a 50-year-old swimmer’s maximal heart rate would be 170; to get a conditioning effect, he should be swimming vigorously enough to elevate the pulse rate to a range of 118 to 145.

Most people decide to take up swimming in the summer, only to give it up with the onset of the first chills of autumn. If you are going to try to get into condition by swimming this summer, here are a few tips and safety considerations to keep in mind:

The best, and the safest, place for swim training at any time is in a pool. Swimming within lane markers, in smooth water, and over a set course will make it easier to learn to pace yourself, and to improve your stroke. The pool should be at least 20 yards long (anything shorter, and you will be spending more time pushing off the walls than swimming), and should be geared to the needs of serious lap swimmers. Before choosing a pool, make sure that the management sets aside lanes for workouts during peak hours, and has some system for regulating the flow of traffic.

If you must do your workouts in open water—in a lake or at the ocean—try to do it within a confined, marked-off area, such as between two buoys or jetties. Always swim along the shoreline, not away from it. And of course, never swim where there is no lifeguard on duty. Remember that even Diana Nyad never swims alone.

So far, the practice of swimming for fitness has grown steadily, quietly, away from public attention. Running remains the fashionable sport. Now, however, the new swimming books are on their way. The first one to have hit the stands is from Simon & Schuster, one of the most aggressive publishing houses. The book’s title is “Total Swimming,” and it predicts a “swimming revolution” in which millions more will turn to the water not only to build their bodies but also to improve their inner selves.

Veteran swimmers will clearly be ambivalent about such new attention. They really don’t mind coming out into the limelight a bit, and having more people learn about something they enjoy so much. They don’t even mind the prospect of all the inevitable hype about swimming and the “inner self”—though perhaps they would prefer to say that swimming simply makes them feel good.

What panics swimmers, though, is the prospect that their sport might suddenly become chic. When it happened to running, there were lots of parks that were available to be filled up with new runners. But in cities like New York, pools are already jammed with serious lap swimmers—and no one is more obsessive than a swimmer fighting for his or her precious lane space. Indeed, the only serious risk of injury that swimmers now face is the increased chance of a head-on collision in an overcrowded lap lane.

So what happens if a James Fixx of swimming does emerge, selling hundreds of thousands of books, and luring a massive number of new swimmers into the pools? Chaos and mayhem in the lap lanes will result, I’m afraid.
The following questionnaire was used to survey the undergraduate and graduate student population of the university in May of 1980. It was mailed to one in every fifteen students using a computerized alphabetical printout: 311 out of 4,517 undergraduates and 96 out of 1,422 graduate students. Replies were received from 64 undergraduates (20.6%) and 27 graduate students (28.1%). The results are presented here. For his assistance in interpreting them, we wish to thank James McBride, formerly Assistant Professor of Statistics at Princeton.
This questionnaire is part of a study being conducted by the Friends of Princeton Swimming to ascertain the nature and extent of the demand for use of the pool in Dillon Gymnasium. This is probably the most heavily used athletic facility in the University already, but it is not known how much more use of it might be made if the addition of a new Olympic-size pool allowed for greater flexibility in scheduling the various activities that now must all be accommodated in the single facility at present available. Your answers to the questions below will help with the measurement of both current satisfied and unmet demand.

1. What use(s) have you made of the pool during the past academic year?
   - physical education class
   - Red Cross lifesaving course
   - scuba diving course
   - water polo
   - recreational swimming
   - competition & training (intercollegiate or masters)
   - diving
   - intramural competition (including Cane Spree)
   - other (please specify)
   - none

2. If you use the pool for recreational swimming or diving, how many days per week do you come to the pool and how long do you stay?
   - 1 day
   - 2 days
   - 3 days
   - 4 days
   - 5 days
   - 6 days
   - ½ hour or less
   - about 45 minutes
   - 1 hour or more

3. Do you frequent any pool in the area besides Dillon regularly? 1 Yes 57 No

4. If the pool were open for general swimming (or diving) at any time of the day, would you make more use of it than you do now? 49 Yes 14 No

   How much additional use would you make of it? (Check one or both columns.
   - 1 more day
   - 2 more days
   - 3 more days
   - 4 more days
   - 5 more days
   - 6 more days
   - up to ½ hour more per day
   - between ½ and 1 hour more
   - over 1 hour more

5. If you had your choice of time to use the pool, what period of the day or evening would you most prefer? (Check one or more.)
   - before 8 a.m.
   - 8-9 a.m.
   - 9-10 a.m.
   - 10-11 a.m.
   - 11-12 a.m.
   - 12-1 p.m.
   - 1-2 p.m.
   - 2-3 p.m.
   - 3-4 p.m.
   - 4-5 p.m.
   - 5-6 p.m.
   - 6-7 p.m.
   - 7-8 p.m.
   - 8-9 p.m.
   - after 9 p.m.

6. Do you have any suggestions about other uses to which the pool might be put if time were available (e.g., synchronized swimming)?

When you have completed the questionnaire, please return it in the enclosed addressed envelope either by sending it through campus mail (drop it in any department's outgoing campus mail box) or by bringing it to Princeton University Press on 41 William Street (between Frick and the E-Quad). Thank you very much for your cooperation.
This questionnaire is part of a study being conducted by the Friends of Princeton Swimming to ascertain the nature and extent of the demand for use of the pool in Dillon Gymnasium. This is probably the most heavily used athletic facility in the University already, but it is not known how much more use of it might be made if the addition of a new Olympic-size pool allowed for greater flexibility in scheduling the various activities that now must all be accommodated in the single facility at present available. Your answers to the questions below will help with the measurement of both current satisfied and unmet demand.

1. What use(s) have you made of the pool during the past academic year?
   ___ physical education class  ___ diving
   ___ Red Cross lifesaving course  ___ intramural competition (including Cane Spree)
   ___ scuba diving course  ___ other (please specify) - kayak
   ___ water polo  ___ 10 none
   ___ recreational swimming
   ___ competition & training (intercollegiate or masters)

2. If you use the pool for recreational swimming or diving, how many days per week on the average do you come to the pool and how long do you stay?
   ___ 1 day  ___ 4 days  ___ 1 half hour or less
   ___ 2 days  ___ 5 days  ___ 11 about 45 minutes
   ___ 3 days  ___ 6 days  ___ 2 1 hour or more

3. Do you frequent any pool in the area besides Dillon regularly?  ___ Yes  ___ No

4. If the pool were open for general swimming (or diving) at any time of the day, would you make more use of it than you do now?  ___ Yes  ___ No

   How much additional use would you make of it? (Check one or both columns.
   ___ 1 more day  ___ 4 more days  ___ 5 up to 1 half hour more per day
   ___ 2 more days  ___ 5 more days  ___ 1 between 1/2 and 1 hour more
   ___ 3 more days  ___ 6 more days  ___ 3 over 1 hour more

5. If you had your choice of time to use the pool, what period of the day or evening would you most prefer? (Check one or more.)
   ___ before 8 a.m.  ___ 12-1 p.m.  ___ 5-6 p.m.
   ___ 8-9 a.m.  ___ 1-2 p.m.  ___ 6-7 p.m.
   ___ 9-10 a.m.  ___ 2-3 p.m.  ___ 7-8 p.m.
   ___ 10-11 a.m.  ___ 3-4 p.m.  ___ 8-9 p.m.
   ___ 11-12 a.m.  ___ 4-5 p.m.  ___ after 9 p.m.

6. Do you have any suggestions about other uses to which the pool might be put if time were available (e.g., synchronized swimming)?

When you have completed the questionnaire, please return it in the enclosed addressed envelope either by sending it through campus mail (drop it in any department's outgoing campus mail box) or by bringing it to Princeton University Press on 41 William Street (between Frick and the E-Quad). Thank you very much for your cooperation.
The following questionnaire, which is the same as the one used to survey undergraduates and graduate students with minor modifications, was sent to all departments of the university in May of 1980 with the request that it be distributed to all current full-time faculty. Thirty of thirty-five departments complied, and responses were received from 233 of the 582 faculty polled. The results are tabulated here. Attached are two unsolicited memoranda submitted with these faculty members' questionnaires that we think are revealing and indicative of sentiments widely shared. Many other respondents added briefer comments, some of which are quoted in the text of the report. No attempt was made to survey non-faculty staff because no easy way of doing so could be found.
Dear Faculty Member: Go first to Question 7. If you do not check that box, please complete the rest of the questionnaire.

This questionnaire is part of a study being conducted by the Friends of Princeton Swimming to ascertain the nature and extent of the demand for use of the pool in Dillon Gymnasium. This is probably the most heavily used athletic facility in the University already, but it is not known how much more use of it might be made if the addition of a new Olympic-size pool allowed for greater flexibility in scheduling the various activities that now must all be accommodated in the single facility at present available. Your answers to the questions below will help with the measurement of both current satisfied and unmet demand.

1. What use(s) have you made of the pool during the past academic year?
   - physical education class
   - Red Cross lifesaving course
   - scuba diving course
   - water polo
   - recreational swimming
   - competition & training (intercollegiate or masters)
   - intramural competition (including Cane Spree)
   - other (please specify)
   - none

2. If you use the pool for recreational swimming or diving, how many days per week on the average do you come to the pool and how long do you stay?
   - 1 day
   - 4 days
   - ½ hour or less
   - 2 days
   - 5 days
   - about 45 minutes
   - 3 days
   - 6 days
   - 1 hour or more

3. Do you frequent any pool in the area besides Dillon regularly? Yes

4. If the pool were open for general swimming (or diving) at any time of the day, would you make more use of it than you do now? Yes

   How much additional use would you make of it? (Check one or both columns.)
   - 1 more day
   - 4 more days
   - up to ½ hour more per day
   - 2 more days
   - 5 more days
   - between ½ and 1 hour more
   - 3 more days
   - 6 more days
   - over 1 hour more

5. If you had your choice of time to use the pool, what period of the day or evening would you most prefer? (Check one or more.)
   - before 8 a.m.
   - 12-1 p.m.
   - 5-6 p.m.
   - 8-9 a.m.
   - 1-2 p.m.
   - 6-7 p.m.
   - 9-10 a.m.
   - 2-3 p.m.
   - 7-8 p.m.
   - 10-11 a.m.
   - 3-4 p.m.
   - 8-9 p.m.
   - 11-12 a.m.
   - 4-5 p.m.
   - after 9 p.m.

6. Do you have any suggestions about other uses to which the pool might be put if time were available (e.g., synchronized swimming)?

7. If you do not use the pool and never will, please check this box. When you have completed the questionnaire, please send it via campus mail to SGT at Princeton University Press. Please return it even if you only answer Question 7. Thank you for your cooperation.

N.B. Do not fill out more than one questionnaire, even if you belong to more than one department.
May I take this opportunity to comment on the Dillon pool facility. I'm not a runner and swimming is the most pleasing and relaxing exercise for me. For two years I tried to use the Dillon facility and finally gave up in disgust this year. The hours open for lap swimming were nearly impossible and conflicted with teaching and research. During the academic year it is very difficult to swim with up to three differently paced swimmers in the same lane. I have been whammed unbearably by strong nontolerant male swimmers. The water conditions range from rarely good to often disasterous. It is disgusting to swim in cloudy, painfully chlorinated water. The locker rooms during heavy use are often poorly kept and shower drains clogged.

Perhaps attention has been given to these problems more recently. It is perhaps a costly venture to provide good facilities, but I, for one, would be willing to pay for a clean place to swim at hours that are compatible with a working day.

I support your improvements wholeheartedly.

Meredith L. Applebury
Assistant Professor
Biochemical Sciences

MLA:gt
The following note if it can help you and your planning group: I am one of several faculty & staff who badly need short-time access to the pool each day for therapy (bad back). I cannot usually meet the existing general swimming hours. Also, the pool is so crowded that I often find excuses for avoiding what I should do — swim for about 20–30 minutes each day.

I warmly support any effort to get better hours, plus as soon as possible an additional pool. The present situation is clearly inadequate.
December 12, 1979

Robert Myslik
Director of Athletics
Princeton University
Princeton, New Jersey 08544

Dear Bob:

I am writing this letter in support of a new swimming pool for Princeton University. As a University Physician particularly concerned with on-going care and physical fitness of the students, a physician in the Department of Athletic Medicine, and as an alumnus, I feel that I have a vested interest in a new swimming pool at Princeton.

As part of the medical care for athletes, I frequently need to refer students for physical therapy. Most of our athletes are engaged in running-related sports and when they have a lower limb injury, swimming is often one of the only activities that they can continue to do to maintain cardiovascular fitness. Many of our students lead very sedentary lives but are receptive to suggestions that they swim to help counteract the effects of inactivity on muscle tone, weight gain, and general mental fatigue.

Faculty and staff also like to use the swimming pool. Many already do, and others would consider using the pool as a lunch time and after-work activity. The current Dillon gym pool is not available for much of the time when these groups would choose to use it. At best, however, the pool is overcrowded. As a recreational swimmer, there have been times when I felt compelled to climb out of the pool after being clobbered by other swimmers for the 6th time in a half-hour session. It is not unusual to find 5 people swimming in a lane at peak hours of usage and many others splashing about in the wading pool.

The Princeton Area Masters are currently using the Dillon facility at the ungodly hour of 5:30 in the morning. This group has been very supportive of Princeton University (many members are University employees or their spouses) and it is just this sort of thing that should be encouraged by the University to bring closer ties between the University and local residents.
I would be happy to discuss this with you further at your convenience. If I can help in any other way please contact me.

Sincerely yours,

Richard Levandowski, M.D. '70
University Physician

RL: sb
March 23, 1978

Dr. William F. Haynes, Jr.
23 Pheasant Hill Road
Princeton, NJ 08540

Dear Bill:

Glad to see you at several swim meets this season and to learn that the Friends of Princeton Swimming are on the scene, watching the needs of Princeton swimmers. I, too, am concerned, not just as an alumnus, but more importantly, as a parent of past and present Princeton swimmers. We all are very proud of the outstanding job done in the past eight years by Bill Farley, particularly the unprecedented six-in-a-row at the Easterns, but he and the swimmers need help with their facility.

There is probably no sport in which recent changes have been so dramatic as swimming, especially in terms of measurable performances by younger participants. Having been closely associated with YMCA, high school, AAU, and college swimming through my sons’ participation over a dozen years, I am convinced Princeton must take two classes of action if it hopes to retain its hard-fought position of excellence in this sport. Both of these relate to the fact that Dillon Pool is rapidly becoming obsolete.

First, relatively inexpensive repairs and equipment purchases should be made immediately, such as better loudspeakers and an electric scoreboard. It is unfair to participants and spectators alike to have a meet run “in the dark.” I’m sure there are many other relatively minor purchases, including housekeeping items, meet programs, etc., that can improve the tone, morale, and attitude of everybody involved in the meets, including prospective University applicants. Such expenses can’t be that high in the total athletic budget.

Second, Princeton must give the highest priority to a new pool which would be 50 meters long and at least six lanes, hopefully eight, wide. This is not a luxury anymore. The top-quality age-group swimmers we want at Princeton are now dedicated to making international time standards, such as Pan Am games, Olympics, etc., all of which are held in 50 m. pools. Any expert knows that swimmers cannot get adequate long-course (50 m.) practice in a short-course (25 yd.) pool, regardless of the total distance swum.
Dr. William F. Haynes, Jr.
Page 2
March 23, 1978

Such a major swimming facility would, of course, be used for more than the University team. As those who have built them have found, such a pool becomes a year-round center of aquatic activities, drawing participants from wide geographic and age ranges.

Bill, let's don't kid ourselves. With several top eastern schools now having modern, well-equipped swimming facilities (Harvard, Brown, Columbia, West Point, and Colgate come to mind - and Yale still has a great facility, even though old), Princeton is going to have increasing difficulty in attracting the top swimmers. That's not to mention the very powerful recruiting programs mounted by non-Ivy schools.

Recognizing how much competition there is for every dollar in Princeton's capital budget, I still think the choice becomes very clear. Do the Administration and the Board of Trustees want the University to remain at or near the top in Eastern swimming? I think they will answer "yes" and come to realize that the above steps must be initiated quickly when the Friends and others concerned with Princeton athletics bring these facts to their attention.

Here's to continued success for the Princeton swimming program.

Sincerely yours,

[Signature]

RLC/jpm
cc: Coach Bill Farley
November 30, 1979

Mr. Robert Myslik
Director of Athletics
Princeton University
Princeton, NJ 08540

Dear Bob:

The writer of the enclosed letter, Professor Charles Neu of Brown, and I were in Princeton for several days last month attending the symposium on Woodrow Wilson's foreign policy. We both wanted to get some exercise, especially after sitting for so long every day. For me that was comparatively simple, since I went running either early in the morning or late in the afternoon outside. For him, however, things weren't so easy, since he is a swimmer. He was pretty disappointed in both the availability and the facilities for swimming, and he went on at some length contrasting these with what Brown provides. I urged him to write me about this, so that I could pass his remarks along to you.

I hope that what he has to say is of some use to you in determining policies on making athletic facilities available to as wide a university community as possible. As a latter day convert to the pleasures and values of exercise, I consider that perhaps the most important function of any university's athletic department. At any rate, I think you will find his remarks interesting.

I hope that all is going well with you. It's a real pleasure to see so many classmates doing fine work at Princeton. I used to see a bit of Jim Wickenden when we both lived in Wellesley; please give him my best.

Yours sincerely,

John Milton Cooper, Jr.
Professor

JMC/cjk

Enclosure
Dear John:

During our stay at the Woodrow Wilson Symposium, you asked that I write about conditions at the Princeton pool. I used the pool twice and was, I must admit, shocked at the way in which it is run and surprised that the university community tolerates these conditions. Three points come to mind:

1. The pool is open for general swimming from about 9:00 to 2:00, which strikes me as very inadequate hours for any university, particularly one the size of Princeton. In contrast, the Brown pool is open Monday-Friday from 9:00 to 2:00 and in the evenings from 8:00 to 11:00. It is also open on Saturday from 12:00 to 6:00 and Sundays from 11:00 a.m. to 10:00 at night;

2. No towels are provided, and the locker room is shabby, as if it is run by people who really don't care anymore;

3. The pool is laned off properly, but no provision has been made for swimming counterclockwise in the lanes. As a result, each lane will hold only two swimmers, when with a minor change, each could hold three or four.

At Brown we regard the pool as a university rather than a swim team facility, and the liberal hours reflect this philosophy, as well as the realization that regular swimming is essential to the health and well-being of many members of the university community. I regret to observe that these attitudes are not reflected in the management of the Princeton pool.

Cordially yours,

Charles E. Neu
Professor

CEN: km
Designing Tomorrow’s Aquatic Center

Today, there are many new elements in swimming pool design and planning in all stages. Pressure from two sources is currently making many competitive pools obsolete: (1) There is a growing desire among U.S. swimming coaches to train swimmers over the international distance of 50 meters. At present, only a handful of universities have 50 meter pools. (2) Swimming and diving is turning into a spectator sport and few pools have adequate seating facilities.

Although our firm has designed many pools with various solutions

By Robert Jackson Smith, AIA. Mr. Smith is a partner in the architectural firm of Eggers and Higgins of New York City, and is considered to be one of the foremost swimming pool designers. He is also chairman of the International Diving Committee and referee at the Olympic games.

to these and other problems, we still wanted to incorporate some new ideas into an “aquatic center of the future.”

When we learned that Princeton University was constructing a new fieldhouse-gymnasium and the master plans for the varsity athletic plant contained space for an aquatic facility, we obtained approval from the athletic department to develop a “dream pool” designed for the site.

However, in designing the “perfect” pool for college and community use, other needs had to be considered in addition to the 50-meter pool. The official American indoor distance requires 25-yard lanes, with space provided for diving, preferably apart from the swimming lanes. This arrangement permits practice and preliminary diving competition to go on while the swimming events are taking place in the main pool.

Another concern was the fact that decks around most pools are too narrow. Other factors to be considered included: separation of dry and wet corridors as well as stairs; room for lockers and showers; offices and television facilities; proper lighting, heating and ventilation, along with good acoustics. All these had to be resolved at reasonable costs.

Then, too, the pool should serve more than just one purpose. Space should be provided for teaching beginners, space for water polo, lifesaving, and sufficient depth for diving from the intermediate and 10-meter platforms. Space should also be devoted for a warm-up area for swimmers awaiting their events.

Although we envisioned this aquatic center at Princeton University

(Continued on next page)
ic plant for a 3,500 student university, it could be adjustable to the needs of schools or colleges whose student population might vary from 2,000 to 20,000.

Primarily, the basic competitive pool as designed, is 60 feet by 75 feet in size. For the small college or secondary school, the basic pool (in a 110 x 110 ft. room) would provide seating for 600 to 800 spectators on one side of the pool.

For a college with an enrollment of 2,000 to 3,000 students, the structure as designed for Princeton, minus a diving pool, could be considered. The three-pool complex (basic, training and diving pools) should meet the needs of institutions with enrollments of 4,000 to 8,000 students.

The pool designed for Princeton solves other problems in competitive swimming pool design. A mechanically-operated, submersible deck, 60 feet by 15 feet, divides the main pool into two 25-yard distances, complying with the official National Collegiate Athletic Association and Amateur Athletic Union of the United States (indoor) distance. With this dividing deck raised, the rear pool provides an ideal practice and warm-up area, as well as an area for beginner training.

During a large meet, the preliminary diving trials could be held in the practice diving pool, freeing the main pool for preliminary swimming events. For the finals, the main pool could be used.

Two of the diving stands in the practice pool and two in the main pool are mounted on hydraulic lifts. These can be used for one-meter or three-meter diving, in addition to providing excellent teaching levels since springboard settings could be made at intermediate heights between one and three meters. The high diving platform in the diving pool could be mounted on hydraulic cylinders and adjust to heights from three to 10 meters.

Tiers of seats on either side of the center pool give spectators the best possible view of every racing lane.

Comfort is another factor which has been provided for in this pool. The temperature in the diving pool is maintained at 85 degrees as is the air surrounding the area. This provides comfort to the diver who is constantly in and out of the water. Opaque fiberglass curtains and a glass wall separate the diving and center pools.

Water temperature in the swimming pool is maintained at 74 degrees, while air temperature in the room is maintained at 80 degrees during practice sessions and lowered to 72 degrees for spectator events.

Swimmers are always kept comfortable by the heat from radiant panels embedded in the floors and walls around the pool. Relative humidity of the pool room is controlled to a range from 40 to 50 percent. The pool area is illuminated to a level of 50 to 100 foot-candles at the deck level, with provisions for doubling for television broadcasts.

Because of an accident observed at the pre-Olympic swimming and diving meet in Tokyo in 1963, we have eliminated side windows in order to reduce distracting glare and reflections from the surface of the water.

The accident occurred at the Tokyo Municipal Pool which has full-height walls of glass on three sides. An American diver, coming out of a practice somersault dive, opened from his tight spin position perpendicular to the window wall, thinking that this was the pool's surface due to the glare. The results were disastrous, and we vowed at the time to seek to have pools designed for divers and swimmers—rather than for a glamorous view of surrounding landscapes. #