The Harvey S. Firestone Memorial Library

The Harvey S. Firestone Memorial Library, representing three years of actual construction and a quarter century of planning to fit it to the Princeton pattern of education, will be turned over to the University by the architects next week at the official dedication exercises to be held on April 30.

Not "merely another building," not "solely a shelter to books to preserve them against the ravages of time," the Firestone Library is, in the words of President Harold W. Dodds, a symbol of "the inestimable opportunity of intimate association with the thought and the experience of the human race."

"Within the walls of this building," President Dodds observed at the cornerstone laying ceremony of 1947, "the miracle that we take for granted, because the process is quiet and continuous rather than demonstrative and instantaneous, will constantly occur: the miracle of imagination kindled, prejudice thrown overboard, dogma rejected, conviction strengthened, perspective lengthened.

"This miracle is performed by teachers and students together through the instrumentality of books, the only means by which the past can speak to the present or the present wisely prepare for the future.

"This library has been thoughtfully planned with one chief purpose in mind—to break down the barriers between a young man and the company of the great, and to make it easier for him to appropriate for himself that which hosts of great men, leaders in the march of progress, have to offer. But this library, like any other, can only present an invitation and an opportunity. What students and scholars do with that opportunity is for each to decide."

For eight months now the Firestone Library has been in the active service of Princeton University. It has been an exciting time—exciting for the students and scholars who have gratefully accepted the invitation and opportunity which it provides; exciting for the library personnel who have labored diligently to insure that the daily miracles come to pass; exciting too for the visitors who have come by the thousands to inspect the features of one of the truly great libraries of the world.

It is difficult to convey that air of excitement to one who has never entered Princeton's new library building or walked through any of the corridors on its six floors. It is difficult, but that is what this issue of the Alumni Weekly attempts to do.

For those who have never seen the Firestone Library, and for those on the campus who use its facilities in their daily work, this issue, it is hoped, will be of interest. For in pictures and text it strives to tell the story of the new Firestone Library and how it came to be.

To tell that story, an introductory narrative and a look into the past two centuries at old Princeton libraries is followed by a group of special sections: financing; planning; solving an architectural problem; constructing the new library; moving its 1,200,000 books; and, finally, using the Firestone Library and examining in close detail its many points of special interest.

The introductory report begins, of necessity, with the Princeton pattern of liberal arts education, the key to an understanding of the real significance of the Firestone Library.

For over 200 years Princeton has placed its faith in a policy of individualized instruction fostering close relations between faculty member and undergraduate. By bringing into close contact during working hours the three elements of an education—student, books and teachers—Princeton's new library provides the physical facilities required for full implementation of its curricular program.

Variously described as a "campus workshop" and a "humanistic laboratory," the concept of the Firestone Library affords the member of the so-called "reading" departments—in the humanities and social sciences—the advantages of ready accessibility to the tools of his trade and to fellow students and faculty in the same field. It is an advantage which the student of chemistry or physics, for example, has long enjoyed in the laboratory buildings of the natural sciences.

Princeton's new Firestone Library is, accordingly, more than a repository of books. It is an educational building, a liberal arts university in itself.

The major theme of the library is encouragement in the use of books. Three principal methods have been followed to make book-reading inviting. The "open stack" policy (it is the first large university library to abandon the "closed stack") affords the student free access to the books. Close at hand, wherever he may be, is a comfortable place to read. And over all is an atmosphere which endures the monumental, awe-inspiring or forbidding, and emphasizes informality.

Describing this primary objective of the design and conduct of the Firestone Library, Librarian Julian P. Boyd notes that "the outstanding characteristic of the new library building is its openness, its ease of access to books and to library services. It does not provide a single 'browsing' room for adventure among books, as was the custom in library planning two decades ago. Rather, it seeks to permeate the entire structure with opportunities for such adventurous at any time and
The Library System

THE Firestone Library is now the hub of Princeton University's library system. Nine other departmental and specialized libraries are located on the campus: graphic arts at 56 University Place; engineering in the John C. Green Engineering Building; art and archaeology in McCracken Hall; psychology in Van Hall; mathematics and physics in Fine Hall; biology and geology in Guyon Hall; public affairs in the Woodrow Wilson School of Public and International Affairs Building; astronomy in the Observatory; and chemistry in the Frick Laboratory. Special libraries and carrels at all but two of the collections are included in the Princeton library staff of 116 men and women.

Recognition of this major contribution, the Trustees named the building after the pioneer in the development of rubber. Throughout the building, moreover, are other memorials in the form of special sections, exhibition rooms and carrels.

The contract for construction of the building was awarded, after interviews with several concerns, to the Turner Construction Company in the fall of 1944, and Princeton's many years of waiting for its new library began to draw to an end on the day after New Year's in 1946.

Huge earth-moving machines began to remove the first trackholds of what eventually proved to be a total of 70,000 cubic yards of earth and 30,000 cubic yards of rock. Disposal of this quantity of dirt was in itself something of a problem, but it was solved by topping off a low spot on the campus to provide a new athletic field and by filling a nearby abandoned quarry owned by the University.

Excitement of an unexpected sort was caused early in the spring of 1946 by the discovery of fish fossils in a section of late Triassic Age shale. Princeton geologists had been keeping watch on the excavation, and their practiced eyes finally spotted specimens which they identified as Osteolepides newarki. The fish, buried for 175 million years, were the most perfectly preserved ones of the coelacanth type yet found in this hemisphere, revealing hitherto unknown anatomical details. Fossil hunting became a lunch-time pastime of the workmen on the job, and one of the best specimens was uncovered by a truck driver.

Excavation completed, the long task of pouring 13,300 cubic yards of concrete began. The three bottom floors of the building are essentially of ware-

The Faculty Lounge: A long-felt need on the Princeton campus was met last month when furnishings for the Faculty Lounge arrived and the handsome room on the third floor of the Firestone Library was opened for use by the University faculty. Adjoining the spacious room is the Seisa Alcove and a well-equipped kitchen which services a luncheon room located on the balcony directly above. On the east wall of the lounge is a Flemish tapestry, the gift of the late Gordon S. Rentschler '07 and Mrs. Rentschler.

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Julian Parks Boyd "might be described as a southerner in the dignity of his bearing and the courtesy of his manners, and as a northerner in the relentless energy of his mind and the extraordinary administrative capacity that marked him out at the age of 37 for appointment as Princeton's librarian."

In these words the 1949 Brice-a-Brac introduces the man to whom this year's campus year book is dedicated. "For his friendly spirit, for his accomplishments and for the ideals he has championed," Julian Boyd has been honored by the undergraduate publication for his vital role in the fulfillment of Princeton's hopes and ambitions for a great new library. The simple language of the dedication piece tells the story of the man and his work; and the Alumnae Weekly expresses its thanks to the Brice-a-Brac for permission to quote it in this Library Issue.

"This sectional analysis," the dedication continues, "is of course too glib, for Mr. Boyd, as a scholar and as editor of the writings of Thomas Jefferson, is a citizen of the world. It has, however, some biographical basis.

"The facts are that he was born in South Carolina and went to school and college in North Carolina; that he came north for graduate work in American history at the University of Pennsylvania; and that, as a very young man, indeed, he acquired a brilliant reputation in the field of local history, while moving from Wilkes-Barre to Fort Ticonderoga and back to Philadelphia as director, in rapid succession, of the Wyoming Valley Historical and Geological Society, the New York State Historical Association and the Historical Society of Pennsylvania.

"In each of these posts, while performing a multitude of other tasks, Mr. Boyd produced distinguished historical works. Of these, the last he completed before coming to Princeton was a monumental edition, in collaboration with Carl Van Doren, of the 'Indian Treaties Printed by Benjamin Franklin.' And in each post, besides, he made a multitude of friends. His talent for friendship, a leading trait in his character, is manifestly inborn.

"In 1940 he was called to Princeton, not merely to assume charge of one of the nation's largest collections of books, but to translate into reality the long-projected plans for housing and serving that collection so that it would best fulfill all the varied purposes of a great academic community."

"Mr. Boyd's career has been distinguished by his championship of free access to, and exchange of, knowledge on all levels—local, national and international. He has struck effectively at every form of censorship, suppression of information and proprietary selfishness that he has encountered in the scholarly world. This is good Jeffersonian doctrine, but it is also as up-to-date as today's headlines. It is the statesmanship of learning and library science."

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appropriate for the storage of Princeton's mounting collections.

The visitor to the Firestone Library enters it from the ground level walking across a flagged court between it and the University Chapel. Immediately inside the entrance is the main hall with the Reference Reading Room opening off to the left, the Public Catalogue straight ahead, and the circulation desk on the far right. Leading off, to the right and to the front, is the desk for books reserved for reading in specific courses, and an adjoining reading room. Also leading off to the right are an exhibition gallery and a series of rooms for special collections.

To the rear of the main floor, contiguous to the catalogue and circulation desk, is the preparation area. Operations here are on an assembly line basis, acquisitions passing in a straight line from the elevator which brings them up from the receiving room to the carriers which take them to their final destinations.

The main floor and the two floors above it have a smaller area and are somewhat different in character from the three lower floors. Rooms for special collections dominate the floor above the main floor. The third floor above ground houses the "tools and workshops" of the Departments of Classics, Oriental Languages, Philosophy and Religion. Situated on this level, also, is the Faculty Lounge.

The three floors below the main level provide the bulk of the storage space. Each is roughly 350 feet by 225 feet in area and has a book capacity of 500,000 volumes. Five departments—Economics, History, Politics, English, and Modern Languages—occupy space on these levels, together with several research bureaus, such as the Industrial Relations Section and the Office of Population Research.

Through use of reverse grading, and as a result of a natural slope in the site (which, at its high point, made possible the location of the main entrance in the center, vertically, of the building), one entire side of each of the three lower floors and parts of two other sides have daylight. The offices and study rooms are, naturally, arranged along the daylight side of these lower floors.

Photostat and microfilm facilities and dark rooms are housed on one of the lower levels, as are receiving rooms. Receiving operations are aided by an interior "dock" where trucks can load and unload, irrespective of weather conditions. The hundred-old members of the library staff have for their own use a large lounge with adjoining kitchen, two flights down from the main floor.

Carrels: A distinctive feature of the Firestone Library is the large number of carrels, 494, located through the stack area on each of the three lower floors and the two above the main level. In reality a private study adjacent to a particular field of learning, a carrel provides for the student to whom it is assigned a desk, bookshelves, a comfortable chair and an adjustable desk light. Ventilating ducts keep the air fresh and each door is equipped with a combination lock, to permit its occupant to protect his papers, books, typewriter and other property from possible disturbance. Over half of the carrels, each bearing a simple dedication plaque, are memorials presented by alumni and friends.

Convenient for readers and helpful in the effort to break up the great mass of stacks, particularly on the lower floors, are the attractively furnished reading "cases" which are scattered here and there in the book storage area. Anywhere in the building the "brows-er," as well as the student, can find a well-lighted, comfortable place to sit within a short distance of the bookshelf where he selected his books. The mass effect is also broken up, as far as the eye is concerned, by the ingenious use of different tones for the columns which define the "modules" and for adjoining walls.

For the graduate student and the thesis-writing senior, to whom it is a convenience to be close to their sources for prolonged periods, the Firestone Library affords individual study places. Each of these 494 carrels has a combination lock on the door, so that the occupant can dash off to class or leave for dinner without bothering to remove his notes, books and typewriter. For as long as he needs it, the carrel is his private study.

On each floor, directly above and below the circulation desk, is a service room manned by a page. To these centers requests for books made at the circulation desk are dispatched by pneumatic tubes. Books are carried up and down from each center on an endless belt conveyor which automatically deposits its burden at the designated floor. In installing both the conveyor and the pneumatic tube system provision...
was made for their extension into any additions to the library which may be built.

In areas where fire is most likely to occur, such as the receiving room and repair shop, and where absolute protection of rare manuscripts is required, an automatic fire-extinguishing system has been installed. This method makes use of carbon dioxide which smothers fire without damaging contents of a room.

Air-conditioning is also provided in areas where humidity and temperature control are essential to the well-being of literary treasures. The whole building is ventilated by interior ducts and, if at some future date air-conditioning of all areas seems desirable, these could be used for that purpose. Heat is provided by the central University Plant. While most areas in the library are heated by hot water or steam, warmed, humidified air is circulated through the ventilating system.

In external architecture the building follows collegiate Gothic, bringing it into harmony with its neighboring structures, the University Chapel, the old Pyne and Chancellor Green Libraries and the John C. Green Engineering Building.

The architects pursued the unusual course of arranging all interior space before considering the exterior. The result has been that efficient interior design has not been forced to give way to preconceived notions of external appearance. The intent, as President Dodds has said, was for the building "to serve a while educational purpose" and not, "as has too often been the case in the history of college and university construction, to provide an architectural monument."

A History of Princeton Libraries

IN 1930, the Trustees of the four-year-old College of New Jersey voted to purchase a bookcase. This is the first record in Princeton's annals of a provision for the printed word. The latest official action, now to be consummated, is acceptance from the builders of the Harvey S. Firestone Memorial Library.

In the interval between ordering the bookcase and completion of the six-story, $6,000,000 building, the archives have been filled with many minutes, many reports, much planning and much discussion about the printed word at Princeton.

During the two centuries, the library's physical facilities have been recurrently at the top of the wave and the bottom of the trough. Now once again they have risen to the crest. Matching in impressiveness the University Chapel and Nassau Hall, the new structure completes a trinity of symbols, providing an appropriate house for things of the mind to stand beside the older temples wherein spirit and sentiment reside.

STANHOPE HALL, the second of four surviving buildings (Nassau Hall, Chancellor Green and Pyne) on Princeton's campus which have housed its library facilities prior to the Firestone Library.

The books which the first students of the College of New Jersey used were in the personal collections of Presidents Dickinson and Burr, but it was not long before contributions began to trickle in. The 1750 bookcase, for instance, presumably was acquired to shelve the volumes provided through a grant of thirty pounds from the Society in Scotland for Propagating Christian Knowledge. The then munificent gift of Governor Belcher (whose shield hangs to the left of the Princeton seal above the entrance of the Firestone Library) to his "adopted daughter" of 474 volumes gave the College the sixth largest library in the colonies. And President Witherspoon brought with him, from across the sea, 300 specially-selected books.

The acquisition, care and housing of books were, from the beginning, a continuous problem for trustees and faculty. One of the objectives of the money-raising mission of Gilbert Tennant and Samuel Davies to Great Britain in 1733 was to obtain gifts of books and funds for a library room in the proposed permanent home for the College, Nassau Hall. In his account of the moving of the College to Princeton, Aaron Burr noted that two large boxes of books had been shipped by water from Newark to New Brunswick.

The contents of these two boxes were shelved in the library's first home, a second-floor room, where many sessions of the Continental Congress were held, above the center entrance to Nassau Hall—space now occupied by the upper portion of the two-story Memorial Hall. Here, three years after the College moved into the new building, 1,281 volumes were counted, and by the end of the century, despite ravages of the Revolutionary War, 5,000 were available.

The word "available" should not, however, be construed too freely. Whereas today the doors of the Firestone Library are open until midnight and the undergraduate can pick and choose among the books at will, the Nassau Hall library room was open one hour, one day a week.

Fire has played a significant and, paradoxically, far from disastrous role in the destiny of the library. The fire of 1802 which gutted Nassau Hall

Frederick Vinton Librarian, 1873-1889  
Ernest C. Richardson Librarian, 1890-1920
seemed at first to be a major catastrophe. Except for 100 volumes which President Smith had at his home, the library was wiped out. But, save for the pang of a sentimental attachment to the original books, the library gained, rather than lost, as a result of fire—as it was to do thrice more.

Generous donors throughout the colonies, their sympathies touched and purses strings conscienciously loosened by the news of the disaster, came to the rescue. Two years after the fire, Princeton's library had 1,000 more volumes than before and was housed in a new building, successively known as the "Library," "Geological Hall" and "Stanhope Hall," wherein was provided "a room for the reception and handsome exhibition of the library."

A half-century later the flickering fingers of fire wrote the beginning of a new chapter in the history of the library. When Nassau Hall burned again in 1855, the reconstruction plans called for extending the old prayer hall in the rear of the building and equipping the enlarged room for the library. Work went slowly, however, and it was not until 1860 that this "large, beautifully proportioned room," measuring 74 feet by 36 feet and 30 feet high, was ready to receive the books from their long-time resting place in Stanhope Hall.

It was this room, now known as the Faculty Room, that witnessed the beginning of modern library philosophy, which, developed to its present state, has resulted in the Harvey S. Firestone Memorial Library. When President McCosh, who laid so many of the foundation stones of the University of today, arrived in Princeton in 1868, he was disturbed at the condition of the library and reported to the trustees that he found it "insufficiently supplied with books and open only once a week and for one hour."

President McCosh promptly arranged to have the library open every day but Sunday; and within a few years he had hired Princeton's first full-time professional librarian and had obtained a new building designed for library purposes. The librarian was Frederick Vinton, formerly of the Library of Congress. The building was Chancellor Green Library, given in honor of his brother by that generous friend of Princeton and of Lawrenceville, John C. Green. A few years earlier John Green had contributed to the library its first endowment of any size since James Madison's bequest of $1,000—a fund known as the Elizabeth Foundation which brought in an annual income of $3,000.

No effort was spared to obtain the

NASSAU HALL LIBRARY: Modern library philosophy is said to have had its beginnings in the room above, remodeled as Princeton's library in 1856 following the second Nassau Hall fire of 1853. Here, through orders from President McCosh, the library was opened each day except Sunday; and here Princeton's first professional librarian, Frederick Vinton, began his 17 years of service. The room, on the south side of Nassau Hall, later became the college museum and finally, in 1906 as it is today, the Faculty Room of Princeton University.

MODEL LIBRARIES—IN THEIR DAY: Octagonal Chancellor Green Library and rectangular Pyne Library were, at the time of their respective construction dates of 1873 and 1877, remarkable buildings in many respects. Outstanding libraries they were, too, except for a lack of flexibility and a means of expansion to meet Princeton's growing demands for library facilities. Trustees were so proud of Chancellor Green that they insisted on putting it on the front campus; while Pyne was noted for its "stack" plan of bookshelves, reaching from the top of the building to the bottom, and other features which led it to be called "a milestone in the history of library construction." Pyne, the first campus building of "academic Gothic," was believed to have sufficient book capacity to serve Princeton's needs for 500 years.

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best of thought on the design of the Chancellor Green building, which was erected in 1873 at a cost of $120,000. Circulars were sent to faculty members and others asking for advice and suggestions. President McCosh, it is recorded, favored a rectangular building similar to the library at Queen's College, Belfast, but apparently did not press for his preference.

For, as all Princetonians know and as Professor Thomas J. Wertenbaker notes in his history of Princeton, "out of the plethora of advice grew an octagonal building of stone, each side capped by a pediment and pierced by slender windows, with a skylight above and two wings connected with the main structure by ornate doors. So proud were the Trustees of this building that they insisted upon its being on the front campus, even though that necessitated destruction of Philosophical Hall, made famous by Joseph Henry's epoch-making discoveries."

Except for inadequacy of light, the Chancellor Green building was admirable, at that time, considering the size of the student body, the collection of books and the degree of reading and research that went on. Librarian Vinton, whose many services included the task of making a card catalogue of the collection, sat on a raised platform in the center of the room—a strategic position which by its availability to the supplicant for help and by its unhampered line of sight no doubt encouraged the development of a studious mien among the library's patrons.

The Chancellor Green Library was excellent for its day, and at the time of its erection it was, no doubt, considered ample in capacity for many another day to come. Only one-third filled when books were first moved into it in 1873, within fifteen years it was jammed to capacity with 65,000 volumes. The solution of the problem—a solution which resulted in what became known as "the crime of the nineties," the rearrangement of the East College—came unexpectedly eight years later in the form of a gift of $600,000 from Mrs. Percy Rivington Pyne, mother of the loyal and generous alumnus and trustee, M. Taylor Pyne '77.

Although East College was demolished to make way for the new building, the Trustees did prevent salt from being rubbed into what current taste considers a sore wound. They refused to have the structure built in the style of Alexander Hall. Five times the architect of that building, William A. Potter, who had also designed the Chancellor Green Library, presented plans based upon the auditorium then recently completed. Five times Mr. Pyne and the other Trustees turned the plans down, responding with increasing emphasis that what they wanted was a quadrangle, capable, by the addition of other quadrangles, of future expansion.

Ernest Cushing Richardson, who had succeeded Mr. Vinton as librarian in 1890, expressed his preference for a series of quadrangles beginning on the east side of Chancellor Green and running south, in which East College would eventually be incorporated.

Mr. Potter's sixth plan, substantially the basis of the building, was "not so bad if it had been stuck to," Mr. Richardson recalled some forty years later. "The problem of light had been pretty adequately solved in it, and there were no other serious difficulties about Gothic then in sight."

"Unfortunately, however, for the alleged needs of external architecture, the quadrangle was enlarged and carried farther away from the Green Library in order properly to straddle the road," he continued in an Alumni Weekly article in 1936.

When it was alleged that a country campus required that the building be kept very low. At the last moment, after all the practical details had been checked over by the librarian, without notice plans were changed by the
architect so as to lower still further and in such a way as to throw all floors but the top one—five floors in all—out of level and make the use of trucks impossible without artificial runways. An underground passage from elevator to elevator between north and south stacks was also cut out to the dismay of the working librarians, and to their extreme inconvenience when the south stack was later occupied.

Whatever the drawbacks of the plan, Pyne also had assets which made it, like Chancellor Green in its time, a model library of the day. In the interval between the construction of Chancellor Green and Pyne, librarians and architects had evolved the "stack" plan of bookshelves, reaching from the top to the bottom of a building, to replace the floor cases of an earlier day. The "stack" plan permitted the shelving of a maximum number of books in a minimum of space.

Describing the Pyne Library, the late Henry B. Van Hoens, assistant librarian, noted that the building was "a milestone in the history of library construction... in that it was the first library to recognize a standard height of stack such that the highest shelf of each stack could be reached from the 'deck' without the inconvenience of step-ladders or other climbing devices. It had generally natural light except one side of the fifth stack; and the floors of steel and glass allowed the light to filter through from story to story. It had tables in the stacks for special readers. The books were massed with reference to the loan desk so that the users could be served and supervised by one attendant with the assistance of a single page."

Pyne Library, when completed, was connected by a "hyphen" with Chancellor Green. The latter was then converted into a general reading room and its shelves were primarily devoted to reference works, frequently used books of a like nature and periodicals.

In 1897, when Pyne was ready for occupancy, Princeton had something under 200,000 volumes and the library once again had plenty of space. In fact it was estimated, upon the basis of the then current rate of increase of volumes per annum, that it would take two centuries to exhaust Pyne's capacity. So roomy was the building that for two decades only the northern half of the quadrangle was used for library purposes.

But the estimators had underestimated the increasing demand for books in the burgeoning university and the acquisitiveness of Librarian Richardson. In 1916, Vinton's administration of sixteen years, the collection had increased eight-fold, reaching 160,000 volumes. Mr. Richardson's span of three decades witnessed a tripling, to 430,000, of the number of books in the library.

Like his predecessor, Mr. Richardson contributed to library organization and procedure. In 1899, for instance, he reclassified and recatalogued the entire library, accomplishing this task in less than a year at a cost of $6,000, some $44,000 under the amount estimated for the process. He strove constantly to improve library practice and procedure; and it has been said that "there are few major ideas stirring the library profession today that did not, in one form or another, germinate in his fertile brain."

Mr. Richardson retired in 1920, but before ending his regime he supervised the opening of the south half of the Pyne quadrangle for library purposes. No great changes in library equipment had occurred in the interval since the construction of the building, so that, except for minor improvements in the manufacture of shelving, the south stack was pretty much a duplicate of the north.

The demand for reading space, which was to play so influential a part in the planning of the Firestone Library, had, however, made itself felt. In the fitting of the south side, more study places were provided amid the books and, to relieve Chancellor Green, its top two stories were made into a large reading room.

Some of the flaws which Mr. Rich-
FIRESTONE AT DUSK: On November 12, 1897, Librarian Ernest C. Richardson reported to the Trustees that the experiment of opening the library from eight to the morning until dark had been successful and predicted that if lights were installed, students would come in even in the evening. On December 31, 1948, 33 Princeton students requested and received permission to study in the Firestone Library on New Year’s Eve.

Adrian noted in the planning of Pyne became more and more apparent as the other part of the building was put into use—notably, of course, the inconvenient links between the two halves. Battling with these obstacles to library administration became the problem of Mr. Richardson’s successor, James Thayer Gerould, who was called to Princeton from Minnesota in 1920.

Increasing realism by undergraduates that the book was an important part of education as the classroom—an idea that had its inception, generally, with the introduction of the preceptorial method and that grew to major stature with the upperclassmen of independent study—brought with it problems of administration and of physical space, as did the mounting accretions of the library.

Consequently, it was not many years after the south stack was opened that it became apparent that Princeton would soon face a crisis. Despite the fact that each new reader he attracted and each additional book he obtained intensified his problem, Mr. Gerould never ceased to invite use of the library and to solicit books and book funds. One of the many significant contributions he made was the further integration of the library and its books with the instructional aspects of the university; and his campaigning for a more adequate building to perfect this integration was largely responsible for the movement which has now resulted in the construction of the Firestone Library.

Mr. Gerould’s management of the library, in a far from perfect building, on an exceptionally low budget, and in the face of overwhelming pressure for space, has been termed “nothing less than a miracle of twentieth century librarianship.” Ironically, although he was an expert in library construction and had written a book on the subject, Mr. Gerould twice missed enjoying the satisfaction of administering new buildings for which he had striven. His call to Princeton came at a time when Minnesota was embarking upon the construction of a new library which he had helped to plan, and his retirement from the Princeton post, in 1938, just anticipated the period of concrete plans for the Firestone structure.

Tiring as were the problems of the overcrowded library for Mr. Gerould and his successor, Julian Parks Boyd, the constant struggle to “make do” undoubtedly resulted in a far better plan for the Firestone Library than might otherwise have been the case. From day to day the planners could observe errors that had been made by earlier library designers and could see previously unanticipated needs that had to be satisfied.

The plight of the University Library during this planning period emphasized emphatically that the long history of the physical facilities of the library was basically a story of recurrent poverty and riches. It showed primarily that, however wise it may be, no generation can consider that what it builds is the be-all and end-all.

Profiting from the experience of the past, wisdom dictated that, far more than meeting the needs of the present and predictable future, a library must be built so that its interior can be changed to meet changing demands and so that the structure, as a whole, will be a nucleus about which future generations may erect integrated additions. These concepts of fluidity and flexibility were basic principles in designing the Firestone Memorial Library.

The provision of space for future enlargement was one of the considerations in the selection of the site for the new building. Fire, which had previously illuminated chapter headings in the account of the library, re-entered its story here—again to its benefit. For the site would not have been available had not separate fires, in 1920 and in 1928, devoured, respectively, Dickinson Hall and the School of Science.

The raising of Philosophical Hall to make way for the Chancellor Green Library and of East College to permit the building of Pyne Library are now viewed with regret, but the burning of both Dickinson and the School of Science, from the aesthetic standpoint, even in the same. For further clearance of the site of the Firestone Library, the small Class of 1877 Laboratory and the Brackett Dynamo Laboratory were torn down and the Joseph Henry House, residence of the Dean of the College, was moved.

With the opening of the Firestone Library, Chancellor Green and Pyne buildings have been set aside for administrative purposes. Those portions that can be immediately used without large outlays for alterations are being assigned to various university offices which either occupied rented quarters in town or were seriously cramped in their prior locations. Eventually, when funds are available for complete remodeling, the buildings will be entirely converted for office use.

Of other homes of the library, the renowned Nassau Hall has long been a meeting place for the Faculty and other groups, Stanhope Hall is the hub of University finance and business management, and the room on the second floor of Nassau Hall is no more, having been eliminated to make a two-story vestibule in the reconstruction following the fire of 1835.

All track has long been lost of the bookcase of 1750. Possibly it was never moved from Newark. Had it been preserved it would now be occupying a place of honor in the College of New Jersey Room in the Firestone Library. In that building, it would, by comparison, have graphically illustrated the development of Princeton library facilities from a repository for books to a campus workshop—a university in itself.

PRINCETON ALUMNI WEEKLY
Financing the New Library

Shortly after D-Day in Normandy, a group of front-line soldiers wrote a letter to Princeton enclosing 50 francs for the new library. If this incident was not typical (and, in amount, it is well that it was not), it was at least characteristic of the extent to which the projected library captured the imagination of Princetonians everywhere.

The campaign which opened in the fall of 1943 was not the first effort to raise money for a new library. It had been one of the projects included in the President's Program; and in the intervening years the University Fund had endeavored to maintain alumni interest in Princeton's 20-year-old ambition. It took a measure of courage, therefore, for the Trustees to renew this effort in the midst of the war and to pledge their collective and individual responsibility for its success.

Success it was—one of the two or three most rewarding fund-raising drives Princeton has ever conducted in more than 200 years of self-support. Altogether 1,250 groups and individuals contributed—just about the number originally solicited. If one counts the membership of the classes that contributed, the number participating runs into five figures. The total contributed to date: $6,175,000.

The Library Campaign was organized and directed by the University Trustees. For the first year they were its only workers (each member, moreover, made a gift toward the library before the actual campaign began), and for the duration they were its principal brains and its first line of offense. Most active among them are those listed in the accompanying box. The Library Committee played the whole game and there were no substitutions. Chairman Paul Bedford '07 gave himself unstintingly to the job, and it was a rare week that Princeton did not claim as much of his time as his law practice. His high diplomacy, his enormous energy and enthusiasm developed an unbeatable team of trustees, alumni, faculty and administration.

Plans for the library lent themselves well to fund raising, for they provided almost limitless opportunities for memorials suitable for individual and group donations of every size. As the library itself is a memorial, so virtually all its major and many of its minor components have been given in remembrance of a friend or relative of the donor. Many building campaigns have been handicapped by an inability to suggest gift opportunities within the means of more than a few. The 500 carrels, costing $1,000 each, provided an ideal opportunity and attracted many donors who might otherwise not have given.

The campaign started in the fall of 1943 with the assignment of 40 prospective donors to members of the Board of Trustees for solicitation. Drawing from a list of 1,500 names, they gradually increased this number throughout the following year until eventually almost every person on the list had been seen personally by a trustee, the president or a member of the regional committees.

During the summer of 1944 committees for the library were organized in 29 alumni centers throughout the United States and some 700 prospects were assigned to them for solicitation.

Professor E. Baldwin Smith of the Department of Art and Architecture took time off to become a Bowen ambassador for the Trustees, visiting each of the regions to provide information and stimulation. Regions within a reasonable distance were visited also by President Harold W. Dodds, Vice-President George A. Brakely '07, Librarian Julian P. Boyd, Mr. Bedford, and Henry J. Cochran '00. In all, the regions were credited with adding more than $750,000 to the campaign.

In the latter part of the drive the appeal was gradually widened, and in some instances appeals were made by letter from President Dodds. The campaign, however, never became general. The Trustees were concerned that nothing should interfere with the continued growth of Annual Giving, on which the University so heavily depends.

It is a remarkable fact that at a time

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**LIBRARY COMMITTEE**

**Chairman**

Paul Bedford '07

Henry J. Cochran '00

David A. Reed '00

Stephen F. Voorhees '00

Walter E. Hope '01

Harold W. Dodds, President

George A. Brakely '07

Gordon S. Rentschler '07

Chauncey Beltman '12

Dean Maxey '12

Julian P. Boyd, Librarian

**LIBRARY CAMPAIGN REGIONAL CHAIRMEN**

G. Arthur Howell '39

Richard F. Cleveland '19

Rt. Rev. C. C. J. Carpenter '21

David W. Tibbott '17

Alexander Galt '03

Robert C. McNamara '03

Charles H. Barchenau '17

P. P. Tillinghast '03

Alfred T. Copeland '17

Marion S. Connelly '11

Roblin H. Davis '07

Emory M. Ford '28

Nathan S. Schroeder '98

Sylvestor Johnson '00

John McWilliams '01

J. McFerran Barr '16

William G. Brumder '24

Carl W. Jones '11

Waldron M. Ward '07

Chauncey Beltman '12

W. Logan MacCoy '06

John G. Buchanan '09

David Scott Postle '32

Dean Luther P. Eisenhart

Donald Danforth '20

Theron L. Prentiss '19

Harry C. Weiss '09

F. Moran McConihie '26

Jasper E. Crane '01

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*10* PRINCETON ALUMNI WEEKLY
Library Campaign Construction Fund

Not included in the total is $515,000 raised to date for endowment
when Princeton was raising millions for the library, Annual Giving's quest for unrestricted, expendable funds continued its upward way. Indeed, the generosity of donors to the Library must have been contagious, for in the year 1944-45, when the library campaign was at its height and gradually soliciting a wider audience, Annual Giving made the most substantial increase both in amount and number of contributors that it has recorded before or since— until this year.

As any successful drive should, the campaign for the new library behaved like a rolling snowball. The inner core—the part that is in the hand—was composed of contributions by the Trustees of the University and a handful of other alumni and friends of long-standing loyalty and generosity.

Then came the Firestone gift of $1,000,000, and hope took on the substance of reality. This generous gift brought the goal within sight, and inspired confidence that the job could be completed. If there had been any doubts, they went underground. The snowballing campaign was given a momentum it never lost.

The Firestone gift provided particular incentive to Princeton classes, especially the Memorial Insurance classes in the twenties. Norvell B. Samuels ’24 had been working long and effectively to interest these classes in contributing their memorial funds to the new library and now, in knowledge that the minimum goal was within their collective reach, classes in ones and twos and bunches made their funds available. Ultimately, 21 classes from 1890 to 1943 contributed funds ranging from $1,000 to $200,000 for a total of nearly a million and a half dollars.

Another major boost that kept the ball rolling was the $500,000 contribution of the Institute for Advanced Study. The officers and faculty of the Institute have always been accorded full privileges in the use of the library. In generous recognition of this fact, the Trustees of the Institute asked that their contribution be considered “not a gift but a payment.”

This influx of large gifts made it possible to start construction as soon as materials were available. Ground was broken in December 1945, but the jubilation was tempered by the realization that the minimum goal of $3,500,000 for construction alone had been set far too low. This estimate had been made in 1940 and it was now apparent that at least another $1,000,000 would be needed.

The true measure of the library campaign lies in the fact that it survived this blow and without stumbling rose to 150% of its original construction goal. This was accomplished, however, at some sacrifice to the endowment objective, as it proved necessary for the Trustees to assign all unrestricted contributions to the construction program.

The Trustees, of course, anticipated a sharp rise in construction materials and labor. One of the principal arguments on which the campaign was to be based, according to plans prepared in 1943, was that an early start on construction would make possible advantageous contracts at price levels that may not long be available.” Had construction been delayed even one year longer, it is estimated that the building would have cost at least a million dollars more.

The snowball, however, would not be stopped. The success of the campaign thus far and the start of actual construction encouraged many new givers to step forward, including a considerable number of non-Princetonians. When the campaign officially closed
Contributors* to the Library Building Fund

A
Sheldon Abbott '20; William Abbott, Jr. '11; James Harvey Ackerman '19; Cyrus Hall Adams '33; Julius Ochs Adler '14; Corinne E. Agee '31; Estate of W. P. Agee; John P. C. Alden '07; Donald B. Aldrich; Archibald S. Alexander '28; Douglas Alexander; George Henry Vahl Allen '91; Ethel Davenport Allen '16; American Institute of Public Opinion; William Theodore Anderson, Jr. '34; Charles Bradley Andrews '88; George Bevan Andrews '40; Jerome Edson Andrews '21; Charles Wilson Armstrong '34; Francis Wallis Armstrong, Jr. '31; A. S. Arnold; Harold J. Asa '20; Thomas L. Aspinwall '11; Associated Pharmacists, Inc.; Mrs. Richard B. Austin; Charles Lee Austin '24; and Geoffrey Velazquez Ayoz '20.

B
Edwin G. Bartlet, II '43; Frederick Randolph Bailey '24; Mrs. Margaret Ormond Bailey; O. W. Bailey; Thomas Fisher Bailey '84; Edgar Wright Bailey, Jr. '20; William J. Bales '20; Daniel Baker, Jr. '12; Harold Feiner Baker '04; Harland F. Baker '22; Henry D. Baker '20; Conrad James Baldwin '80; Douglas D. Ball '08; Roy Benjamin '39; Edward Benjamin '58; Edward Benjamin '58; Richard Wetherill Belling '31; Frank H. Bartolommeni '11; Henry Askew Barton '19; Henry Lynn Beattie '38; Word After Batchelor '39; Bernard Bax '20; Charles Robb Battenford '03; James Harvey Beal, Jr. '20; Thaddeus Edmund Beck '26; Frederic W. Beckman '22; Bruce Beddow '39; Paul Beddow '36; Albert Daniel Beers '07.
Charles Preston Beadle '34; Chauncey Bellhorn '12; Christy Wilken Bell '44; Evan Wilkes Bell '40; Harold Sill Bell '11; James Criswell Bell '12; Philip Wilkes Bell '40; Samuel Thomas Bell '15; Samuel Dennis Bell, Jr. '45; Cooper Proctor Benedikt '29; Edwin North Benson, Jr. '39 and Mrs. Benson; William Eldridge Benson '21; John McFarland Berkland '80; George Whitefield Beth '50; R. B. Blackwell '50; Charles J. Biddle '11; John Biggs, Jr. '18; Mary Whipple Bingham; Robert S. Birch '38; Samuel White Birch '30; Charles Clarke Black '78; Mrs. Harry C. Blackwell; C. Ledyard Blair '90; John Insley Blair '04; Thomas Hume Blair '09; Hiram D. Blauvelt '20; Thomas Mofatt Block '29; Robert V. Budge; Edwin R. Blemoux '42; Mrs. Isabel Harper Blount; E. Melville Blum '09; Harold S. Bond '20.

C
Mrs. Katharine A. Bonnell; George E. Booth; E. Shirley Boylan '29; Francis Barlow Bowman '21; Robert Rankin Bayley '88; Austin Boyd '11; Ingram Fletcher Boyd '93; Ingrum Fletcher Boyd, Jr. '26; Mrs. James Boyd '11; James Boyd, Jr. '31; Daniel Lamon Boyd '40;牌 Mary Nancy Boyd; John Ritchie Boyd '20 and Mrs. Lee Carrington Bradly, Jr. '18; Charles Andrew Brandon '24; Alexander Harrison Brown '21; Harvard B. Bright '12; Howard Brown '07; Bertram Miller Brown '30; John Brown, Jr. '23; Edwin James Brooks '20; James Archibald Brooks '22; John Robert Brooks, Jr. '36; Winfield Speed Brooks '04; Gabriel Scott Brown '04; Mrs. Gardner Brown; Milton H. Brown; Robert E. Brown '20; David Kirkpatrick; Eise Bruc; John Gresch Brown '20; John G. Breen '28; Robert L. Bogle '55; George W. Bunn, Jr. '12; J. Logan Burke '20; Mr. and Mrs. E. G. Burkham; Charles Monroe Butler '20; Henry Franklin Butler '22; Howard Russell Butler, Jr. '20; Lee David Butler '22; Mr. and Mrs. Butler; Allison Butts '11; and Robert Allan Butz '40.

Charles U. Caesar '33; Harry Irvin Cesar 1S; James Gordon Campbell '38; W. Roberts Cameron '09; James H. Caldwell '98; Charles Lucas Cadwell '95; Ralph E. Caples '88; Herbert G. Carllburg '11; Carnegie Corporation of New York; William James Carney '41; John Woods Carpenter '77; Elys Carozzi '20; Brooks Burnett Carson '32; Samuel Pierce Carson '11; Ernest Trow Carson '88; Mrs. Eugene Carter; Herbert Pratt Carter '24; Ralgin Leonard Carter '11; Alfred Thomas Caton '35; Lawrence Alfred Carter '01; Lawrence Roberts Carter '07; Charles Merrill Caugworth '94; Dan D. Cazenove '90; Charles Anderson Cates '02; Mrs. Charles A. Cass; Ward Bays Chamberlin '93; Wheaton Chambers '90; John Rust Chandler '27; Roscoe Henry Channing '30; C. Merrill Chapin, Jr. '21; Stuart Chapman '21; Hugh Chapin '28; Clifford Frederick Chapman '22; Walter Frederick Chapman '29; George Bowdoin Chase '27; William M. Chester '13; Wade Turner Childress '26; Miss Mabel Closons; Francis Cohn '29; Alexander B. Clark '12; Philip Moody Clark '30; Richard Folson Cleveland '19; Chauncey Inn; Thomas Warren Cleary '60; Mrs. Malvern B. Clayson; Alexander-Smith Clark '35; Henry Jesse Cochrane '98; Homer Pierce Cochran '29; John L. Cochran '21; Samuel Cochran '93; George V. Coe; George Vernon Coke '02; Bertand William Cole '23; John E. Colman '11; James Randolph Comp.

THE FIRESTONES: President Dodds with the five sons of Harvey S. Firestone: Raymond C. '33, Roger S. '35, Russell A. '46 (President Dodds), Harvey S. Jr. '20 and Leonard K. '51. The picture was taken on the steps of the University Chapel following the cornerstone laying ceremonies on June 16, 1947.
CLASS GIFTS TO THE NEW LIBRARY
(Includes Interest Credit to Funds)

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</tbody>
</table>

*Memorial Insurance Funds.*

*Total includes additional gifts since 1944

MAJOR CONTRIBUTIONS TO THE LIBRARY FUND

- Firestone Family: $1,238,800*
- Institute for Advanced Study: $500,000
- Cyrus McCormick: $1,273,000
- and Gordon McCormick: $1,273,000
- Sterling Morton: $60,000
- William Pierson Memorial Fund: $100,000
- Edith Haagin DeLong: $100,000
- Gerald B. Lambert: $100,000
- Jessie Munger: $100,000

*Total includes additional gifts since 1944

For endowment
ENTRANCE HALL PLAQUE: Symbolic of the vital contribution made by Princeton’s alumni classes to the realization of the Firestone Library is the striking plaque which is set in the floor of the Entrance Hall, marking this section of the building as a gift of several Memorial Insurance classes from 1922 to 1929. The missing class in the otherwise consecutive group is 1926, which had earlier announced its intention of contributing a fund of $150,000 for the quarters of the Industrial Relations Section in the Firestone Library. All told, 21 classes from 1890 to 1943 contributed funds ranging from $1,000 to $200,000 for a total of nearly a million and a half dollars.

Ian '20; George McL. Harper, Jr. '20; Charles J. Harrington; George Bates Harrington '02; George S. Harrington; William Fleming Harrington, Jr.; Erland Harris '20; Frederick Harris '03; Mrs. Victor Harris; William Irving Harris '20; Rufus Freeman Harrison '11; Harry Carlton Hart '22 and Mrs. Hart; John A. Hardwood Foundation, Inc.; Frederick Kibbe Hinkley '93; John Robert Haitsma '09.

Henry Austin Hanhester '09; Henry C. Havens '92; Dudley A. Hawley '11; John Lewis Hay '99; James Edward Hayes '95; Stanley Paine Haywood '98; John Hay Heard '94; Sterling Thomas Heath '20; Frederick Max Helmsdorfer '17; Robert B. Heierman '20; Harold H. Helt '20; John Bickley Henson '09; Thomas Q. Henninger, Jr. '19; John Bruce Hensley '20; Albert Charles Hencken '93; William Frederick Herckes '98; Wellington Smith Henderson '25; William Henry Hendrickson '20; Mrs. Bayard Henry; Stanley Henry '20; Mrs. T. Valentine Henry; Frederick Walter Hesse '99; Henry H. Heston, Jr. '09; Bernard Chapman Hess '27; Edward Hobbs Hillard '95 and Mrs. Hillard; Mrs. Erwin P. Hill; Erwin Rumsey Hils '32; seven Jonez Hirsch '19; Jesse Watson Hirst '99; Lewis Halsey Hixson '99; Llamar Post Hoggard '28; Edward Windsor Hober '20; Wells Atherton Hobler '41; Walter Hochschild; Edward B. Hodge '99; Henry G. Hoge; William J. Holland; Hester, Jr. '39; Earle Taylor Holtsapple '09; Millard Homans, Jr. '22; Walter Ewing Hope '91; David Luke Hopkins '21; Franklin Ferguson Hopple '30; William Edward Hornblower '30; Richard Joseph Horne '20; Arthur W. Horton, Jr. '20; Lewis Daniel How '20; LeRoy K. Howe '11 and Mrs. Howe; Alfred C. Howell; Fred Bancel Howland '94; Henry H. Howe '11; James M. Hubbard '27; Blackburn Hughes '11; Augustine Leftwich Humes '96; Joseph Washington Hunsicker '34; Haskell Jagers Hunt '20; Pelmer Hutchinson '09; and James Hazen Hyde '04.

J

Ralph LeRoy Jackson '11; Melanchthon Williams Jacobus '20; Mrs. Stanley P. Jacklin; Nicholas Fithl John '09; Charles Durand James '22; James Walker Jameson '91; Mrs. A. D. Pollock Janney; Jervis Washington Jr.

K

Gifford Wolf Kahn '26; Rudolph Max Kaufman '25; Samuel H. Kaufman '20; Stephen Allen Kaufman '22; Frank Adams Keen '09; Stanley Keith '02; Alexander Sanford Kellogg '05; Mrs. Frank Leonard Kellogg; Francis Leonard Kellogg '40; John Stewart Kellogg '89; Eugene Hill Kelly '09; C. Tyler Kelsoy '20; James Charles Kennedy, Jr. '11; Charles Matthew Kerr, Jr. '20; Clarence Dilworth Kerr '01; Edwin Wilson Kerr '22; Robert E. Kerr '17; Mr. & Mrs. Leonhard A. Keynes; Carl Otto von Klenbush '05; Oscar Marchant Kilby '19; Edward Joseph Kittlington '40; Mrs. Charles King; Charles A. King, Jr. '09; Edward E. King '22; Mr. & Mrs. Frederick P. King; Mrs. Greta Stahl King; Milton W. King '12; Philip Mills King, Jr. '40; Richard B. King '21; Irving Bowdoin Kingsford '13; C. Frank Kinnear, Jr. '39; William Alexander Kirkland '19; Ralph Kirkman '07; Theodore George Knudt '24; Benjamin Franklin Krass, Jr. '20; Arthur Krock '08; Charles Hezir Letz '40; and John Louis Kuser, Jr. '20.

L

Louis Raymond Lackey '11; Mrs. L. E. Laing, Sr.; Robert Wordsworth Laidlaw '24; Carroll Walton Laird '20; Gerard Baines Lambert '08; Mrs. Wilton J. Lambeth; Haz Haynes Langenberg '29; Harry Hill Langenberg '00; Levin DirlichLang '04; John Adrian Larkin '13; Henry Alexander Laughlin '44; Leslie Irwin Leclaire '00; Leon Leitner; Charles Vaugh Lawrence '11; Mrs. George Allen Lawrence '28; Elbert Hugh Lee '16; P. Blair Lee '18; Remus Eberly Lehman '20; Leon and Sherry Levery '24; William Merzer Legg '42; Alexander Leitch '24; Austin Porter Ledard '25 and Mrs. Leland. James Hanson Lemmon '25; Nicholas Frederick Leson '98; Hart Haynes Leon '38; William Leeds, Jr.; Harlow Baker Lester '24; Henry Harrison Walker Lewis '25; Maud Allyn Lewis '13; Robert Wilson Lewis '24; Samuel A. Lewis '91; Mrs. Lewis; Clarence B. Ligby '11; John Shipley Linnenger '91; Jack E. Lind '42; H. Gates Lloyd '25; Malcolm Lloyd '24; Mrs. Lucy B. Lloyd; Mrs. Wilton Linniman; Harry H. Loebl; Carl Morris Loeb, Jr. '26; Mrs. A. Bow Long; Breckington Long '03; Henry Wheeler Lowe '97; Dr. Walter Louie '90 and Mrs. Lowrie; Lewis Nelson Lunken, Jr. '17; Robert N. Lupfer '09; and Mrs. Mary Lyon.

MC

Douglas Holly McCollister '11; David Hunter McAlpin '20; Walter Paul McBride '22; J. David McCall '23; Richard Winfield McCann '30; Thomas Negretti McCarter Jr. '21; Mr. & Mrs. John M. McCauley;
Charles Arthu Rulon McClintock '07; Gilbert Stuart '09; McKinley '09; Charles Mac-Cloud; Francis Mason McCombie '26; Robert Farrington McCord '22; Cyrus McCormick '12; Fowler McCormick '21; Gordon McFadden '23; J. McDougall, Jr.; David B. McDougal '25; Edward H. McDougal, Jr. '15; Ralph L. McGeach '19; Curtis W. McGraw '19; Mrs. Julia M. Mc-
Pilin; William B. McIlhany, Jr. '22; William Frederick McIntire '06; Edgar S. McCollum '07; McCaig '08; Mrs. Robert McKee, Frances Graham McKeon '04; Frederick Duncan McKinney '84; Charles McKnight '47; Robert Wilkins McKnight '19; Robert McClellan '13; William Lippard McClench '17; Robert Chatake McNamara '03; Thomas S. McPheters '03; Albert Elliott McVity '89; and John McNichols '01.

Wilhelm Logan Macoy '06; William Howard MacCroll '05; Udolpho Sead Macdonald '29; James Wilson Mack '98; Lewis Mack '25; Mrs. Charles S. MacKenzie; M. Reynolds McKinney '23; Malcolm Maclean '00; Edward Ford MacNab '17; William H. MacNab '11; James McCleod Magic '04; David Mahany '07; Arthur Paul Maier '11; Mrs. Eleanor C. Manquand; Frederick Eastman Martin '20; Paul Martin '82; William Malcolm Mather '20; Dean Mathay '12 and Mrs. Markey; Woodford Ahlborn Mayhew '20; John Mater '93; George McKinley Mathis '01; Arthur B. MacKinnon '94; Augustus Kinlock Maxwell, Jr. '41; Isaac B. Mayes '11; Arthur Ferguson Mead '20; Lawrence Meyers '31; Mrs. Elizabeth Meine '82; Oden Hogarth Mee '41; Lac Vielmet Meil '13; Ulysses Grant Meikle '17; Russell B. Mercer '27; William Morris Meredith '60; Alvin Merrill; Alfred Mersoone Merriweather; Charles E. Merrill; John Leonard Merrill, Jr. '24; Richard Andre Mesteau '31; Oliver Merriweather '92; Albert Goodsell Milburn '96; David Knight Miller '20; Henry N. Miller; Mr. 92; James Alexander Miller '91; Neville Miller '16; Russell Miller '21 and Mr. Miller; Dr. Robert T. Miller, Jr. and Mrs. Miller; William Mathewson Miller '41; Paul Long; Mildred Miller '22; Howard Minor '40; Joseph Albert Minot '20; Mrs. Arthur H. Mitchell; James McCormick Mitchell '94; Lawrence Claude Mitchell '45; Andrew Perrins Monroe '11; James Stephens Montgomery '20; John Rhea Morrison '13; John Leon Moore '20; C. R. Moore; Dixon Morgan; John William Morgan '16; Walter Love Morgan '20; William Leverett Morgan, Jr. '22; J. Wistar Morris, Jr. '56; Roland S. Morris '96; Donald A. Morrison '11; John Dwight Mott '22; Sterling Motter '56; William Moses '02; William Seymour Moseman '20; Mrs. Barbara Stahl Moston; Winfield Tyson Mosby '07; Ed-
win H. Moyer; Miss Jessie Mungers; James Wilson Murray '03; John Cornell Murray '12; Edward Allen Myers '38; Paul F. Myers '13; and W. Heyward Myers, Jr. '09.

Mrs. R. W. Neff; Abram Neblitt, II '30; Maurice W. Newton '15; Frank S. Niles '15; John O'Neil '13; Franklin Nixon '94; Estate of Major Benjamin W. Norris; Emory M. Nourse '11; and Paul J. Nowell '18.

John Bertram Oakes '54; Woodbury Swan Ober '23; John Baldwin O'Day '20; Edward A. O'Hara '11; Alfred Van Santvoord O'leary '09; Rowland Grant Oliver

Philip A. Rollins '89

THE FRIENDS OF THE PRINCETON LIBRARY, an association of alumni and others interested in book collecting and graphic arts, particularly as they apply to the Princeton Library, was founded in 1930 by a small group with Philip A. Rollins '30 as the first chairman. Today, under the chairmanship of David H. McAlpin '20, the Friends have a membership of 226 and a well-developed program to carry out their aim of increasing and making better known the resources of the Princeton Library. The Friends accomplish the first of these goals by securing gifts and bequests and by providing funds for the purchase of books, manuscripts and other material, which could not otherwise be acquired by the Library. To make better known its resources, they publish the Princeton University Library Chronicle, a quarterly sent to all members, issue other publications of a specialized nature, and sponsor meetings, special lectures and exhibitions.

The organization was instrumental in bringing to Princeton, in 1946, Elmer Adler and his collection of prints and books, and it supports the Graphic Arts Division of the Library, of which Mr. Adler is curator. The Friends' Room in the Firestone Library forms a part of the Graphic Arts Division and is the headquarters and meeting place of its members. Membership is open to anyone, Princetonian and non-Princetonian alike, who is in sympathy with the objectives of the organization. The present annual subscription is five dollars or more. Now that Princeton has finally a worthy library building, it is the earnest hope of the Council of the Friends that more people will be interested in joining in organization which, despite the severe handicaps of an outmoded building, did so much in the past—and can do so much more in the future—to foster the development of the Princeton Library. Inquiries concerning the Friends should be addressed to Henry L. Savage, Princeton University Library, Princeton, N.J.
RENSCHEI TAPESTRIE: Hanging in the Faculty Room of the Firestone Library is this early sixteenth century Flemish tapestry, presented to the University by the late Gordon S. Rentschler ’07 and Mrs. Rentschler; Peter Earl Rentschler ’22; Sheldon Sickels Reynolds ’28; Sidney Rhenin ’07; Mrs. James M. Rhodes; Harold Charles Richard ’06; David R. Richardson ’06; Raymond Spetz Richardson ’06; Charles Carr Ringwalt ’06; Sir Henry R. Alles ’07; Harry Curtis Robb ’07; Louis Adams Robb ’07; George A. Robinson ’07; Donald Roberts ’07; Isaac W. Wrenn Roberts ’08; Charles Samuel Robertson ’24; Thomas Robins ’25; Thomas Robbins ’27; Mrs. Resteven Robertson ’27; Robert T. Robinson ’27; William L. Robinson ’28; John Davis Robertson ’28; William M. Robinson ’28; Alexander Robinson ’28; Cornwell Burnham Rogers ’28; Paul R. Rogers ’28; Nicholas Guy Roosevelt ’28; George Eberle Ross ’28; Mrs. Ross; Francis Felts Rethan ’28; Robert James Ricketts ’28; Walter Nathaniel Riedel ’28; Francis J. Rieke ’28; Archibald Douglas Russell ’28; George L. Russell ’27; Frank D. Ryan; and The Thomas Fortune Ryan Memorial Fund.

S

Nelson B. Sackett ’17; Carl Robert Sachse ’20; Frederick Barker St. John ’05; Norval B. Samuelson ’24; Mrs. James Satter; Arthur T. Sanford ’09; Edward Sewall Sanford ’09; Raymond Sanger ’20; Charles Channing Savage ’11; Ernest Chauveau Savage ’11; Mrs. Savage; Henry Littig Savage ’15; William Lyttleton Savage ’20; Bessie Elding Sawyer ’20; Howard Martin Sayer ’22; Halsey Sayers ’20; John Edwin Scrafton ’20; Bernard K. Schafer ’20; Randolph Jay Schaefer ’24; Frederick Jordan Schaeffer ’24; Lawrence Maynard Schaeffer ’28; Joseph D. Shaver ‘21; Mrs. John H. Scheide: William H. Scheide ’36; Joseph Howard Scheun ’21; Edward Schickhaus ’20; Adolph William Schindel ’26; Paul Siebert Schoolinger ’20; Albert Linden Schloper ’20; Albert Henry Schroeder ’20; Nathaniel Southwick Schroeder ’08.

T

John Starr Tabor ’20; Abu Kirk Taylor ’11; Mrs. Lawrence T. Taylor; William David Tabor ’20; William Reade Kirkland Taylor ’20; Lasater Terrell ’19; Ralph J. Terrell ’19; Diyvick ’19; Mrs. Dunsew Burnett ’19; John Dunsew Burnett ’19; Edward F. Thompson, Jr. ’20; Henry Burgess Thompson ’20; Raymond Boyd Thompson ’08; Wallace M. Thompson ’20; Samuel Garver Thompson ’99; Thomas Loomis Thompson ’99; E. E. Thurs; Robert Russell Thurber ’20; Livingston K. Thurman ’20; David Watts Tibbott ’17; Marvin F. Thorman; Louis Felix Timmerman ’19; Owen L. Tohill; Frederick Tawney ’94; Philip Beardshaw Townley ’20; W. Richmond Tracy ’11; Triangle Club; Trinity Church of New York; Arthur Luske Turney ’45; George Alexander Twicke ’45; Joseph T. Twicke ’45; Joseph Trusdale ’45; William Hallam Tuck ’12; John Frank Tutel ’20; Joseph Patrick Tuma ’20, Jr.; Frank Harrison Tuttle ’20; Mrs. Bronson Twicke; and Louis Hellenbach Twicke ’25.

U

Akin Underwood ’84.

V

Planning the New Library

I

n a foreword to his catalogue of the 1,281 volumes owned by the "college of New Jersey in 1760, President Samuel Davies observed that a library "is the most ornamental and useful Furniture of a College, and the most proper and valuable Fund with which it can be endowed."

Further, he said, "it is one of the best helps to enrich the minds both of the officers and students with knowledge; to give them an extensive acquaintance with authors; and to lead them beyond the narrow limits of the books to which they are confined in their stated studies and recitations, that they may expatriate at large thro' the boundless and variegated fields of science."

Subsequent administrations did not always share President Davies' concept of the role of books in the educational process; and undergraduates of later periods were driven by the assessment of the titles in the collection and by restrictions imposed upon their use to resort to the friendlier libraries of Chio and Whig for mental stimulation and relaxation.

For many decades, however, librarians have fortunately been placing increased emphasis on encouraging the use of books. Hand in hand with this tendency has been the growing practice of the educator to send his pupil back to the sources, or at the least to induce him to sample the literature on any given subject, with its inevitable divergence of viewpoint.

It was in this spirit, which harks back to the philosophy of President Davies, that the Harvey S. Firestone Memorial Library was built. Translating that spirit into stone and mortar, partitions and shelves, was not an easy matter, nor one that was accomplished overnight. To the eternal benefit of the building, it was erected against a background of a quarter of a century of cogitation and debate.

James Thayer Gerould, who began his 18-year regime as librarian in 1920, had been in office but a few months when he reported to the Trustees the handwriting on the wall. The board agreed with his prognosis and appointed a committee to study library building needs. The trend of thinking then was that the existing library buildings, Chancellor Green and Pyne, could in some way be enlarged or extended—an assumption that was first entertained when Pyne had been erected a quarter of a century earlier.

Charles Z. Klauder, the architect who produced the Helder-Madison-Hamilton Halls group and other distinguished campus buildings, struggled to fit this notion to a blueprint. He developed six plans, but even the best of these, it became obvious, would relieve the situation for but 25 years.

Meanwhile Princeton had taken the

LIBRARY SITE: The northeast corner of the campus, as it looked shortly before ground was broken for the Firestone Library. Macked with white ribbon is the outline of the building, arranged by the architects for the inspection of the Board of Trustees. Running south from the top of a pole in the center of the site is another ribbon indicating the height of the main entrance level on the south side.
second of the two great steps which sent undergraduates scurrying to the library. The preceptorial method of instruction, introduced in 1905, had substituted for spoon-feeding in the lecture hall foraging by the individual in the verdant meadows of recorded knowledge. The second innovation, put into operation in 1923, was the upper-class plan of independent study.

This moved down to junior and senior years some of the techniques of the graduate school. It required the upper-classman to become versed in a particular field of study and tested his mastery with a thoroughgoing thesis. Reading on an unprecedented scale was a natural result of the plan. Within ten years of its adoption, the recorded circulation of library books nearly tripled.

The conditions which confronted the trustees, faculty and library administrators in the twenties were these: A continuing rise in books withdrawn from the library; an almost fantastic increase in circulation of books within the building; an overwhelming demand, on the part of undergraduates and faculty, for a place to sit and make notes; and proper storage space for Princeton's mounting book collections.

Sympathetic symptoms attended these major ailments. Library facilities inadequate for their research became, in some cases, a factor in the failure to attract promising scholars to the Princeton faculty. And prospective donors of priceless collections looked askance at the almost complete absence of space for the proper maintenance and exhibition of their treasures.

Confronted by the circumstances, the planners abandoned the idea that the old buildings could be suitably enlarged and moved on to consideration of an entirely new structure. In 1926, for instance, a faculty committee, particularly alarmed by the lack of reading space for undergraduates, raised the question of erecting a first section of a new building and adding to it as funds could be raised.

Where to put the brand-new structure also became a matter of extensive study. Throughout all considerations of site, it was the neighboring Halls; where "Prospect" is on part of "Prospect" grounds and the adjoining green in front of 179 Hall; or on the site adjoining the chapel, of the burned Dickinson Hall. The decision, also by fire, of the School of Science, opened up still further the Dickinson Hall location and influenced substantially the final choice of this site. In view of the eventual location of the new building, it is interesting to note that Ernest Cushing Richardson, librarian from 1890 until 1920, had, in his thinking on possible enlargement of the Chancellor Green-Pyne group, drawn rough plans of an extension reaching from Chancellor Green to Washington Road.

Mr. Klauder's plan for a new and separate structure called for a three-story Gothic building surmounted by a 133-foot tower. On the first floor, this plan provided a main reading room, periodical room, reserved book reading room and browsing room, and administrative sections; on the second, rooms for rare book collections along with space for the Industrial Relations Section and similar units; on the third, 20 seminar rooms and 66 faculty offices; and on each of the 21 floors of the tower, study carrels surrounding the stacks.

Early in 1937, discussion of the proposed library was galvanized by the suggestion that the building should be a campus workshop wherein the student, the teacher and the books would be thrown naturally into daily constant pursuit of their studies. This concept, elaborated in a document by George Mowry, then chairman of the Department of Art and Archaeology, was adopted. The centralization within four walls of an art library, faculty offices and other facilities which, of necessity, brought student and teacher and books constantly together created a new departmental atmosphere.

He discovered, also, that the same beneficial results had been observed by the scientific departments, which were boused in their own buildings with their laboratories, libraries and faculty offices all together. Why should Princeton, as a whole, he argued, not profit from what had been learned in these instances and provide, within the scope of the new library, individual workshops for the scattered departments in the humanities and social sciences? As in McCormick Hall or Fine Hall, faculty offices, study rooms and conference rooms could be spacious and the books, most needed by the members of those departments.

Professor Mowry pointed out that the humanistic and social science departments had on their rolls more than 70 per cent of the undergraduates. He warned that unless they were provided for, each in time would eventually achieve its own building, a movement leading to far greater cost, decentralization of library books and filling up of campus space.

The current library plan, Professor Mowry observed, was for a general purpose building; he was advocating a structure planned for a specific purpose.
— the purpose of providing physical facilities designed to house Princeton’s particular plan of study.

Professor Morey’s plan resulted in the appointment of a faculty committee for a re-study of the library, and in October 1933 his essential principle was adopted by the Faculty. In January 1934 the Board of Trustees took similar action.

 altering of blueprints for the new building was undertaken to accommodate this far broader concept. A commission was given to Walter H. Kilham Jr. (who became co-architect of the Firestone Library) and Ides van der Gracht ’23 for exploratory sketches. Among other refinements, the huge tower disappeared from the building.

Meanwhile, the space situation in the existing buildings was becoming intolerable. As early as 1933, for instance, Dr. Gerould noted in his report that during the preceding year the library had erected for supplementary storage space 1,484 running feet of shelving in the basement of Holder Hall, 2,246 feet in Dickinson and 1,710 feet in the attic of Palmer Laboratory. There were only 160 seats in reading rooms and 52 study places in the stacks.

In 1938, President Dodds succinctly stated the case for a new building, warning that the “inadequate library in increasing measure is our greatest obstacle to the further development of the undergraduate program of individual study, as well as the chief hindrance to the advancement of learning in the humanistic and social sciences departments.” He declared that the proposed new building would “bring students, faculty and books into stimulating human relationship” and would set a new national pattern for university libraries of the future.

The final chapter of the long story of planning the new building began about 1944, paradoxically in the closing years of a war which had threatened to postpone almost indefinitely the realization of Princeton’s dream. With funds in sight for the building, planning went actively ahead again.

The new start was practically a fresh start. Although the earlier debating and experimenting were invaluable in crystallizing thought on the building, preceding blueprints outlined structures which lacked sufficient flexibility and adaptability to change and expansion. Since the great laboratories and other buildings erected during wartime seemed to provide useful hints on how to avoid rigidity of plan, the Trustees instructed Mr. Kilham and his partner, Robert B. O’Connor (M.F.A. ’20), now supervising architect-designate of the University, to begin all over again.

In March 1945, architects, faculty and trustees plunged intensively into a re-examination of past concepts and a translating of the needs of the individual departments into exact terms of floor space, book space and partitions. Thirty or more meetings and interviews, the architects recall, were held in the succeeding five weeks. Over all these planning sessions hung the ominous fact that the amount of building that a given sum of money would buy was steadily decreasing.

Under pressure of working out actual plans, that phase of Professor Morey’s concept which provided for the shelving of books in a particular field in areas contiguous to the work space of the department involved was almost replaced by a “vertical plan” which would have devoted the lower floors of the building entirely to book storage and the upper floors to study and office space. In the end the Morey concept prevailed; and the problem was solved by assigning the periphery of the three lower floors — where the bulk of the books are stored — and of the two upper floors to study and office purposes and the interior to stacks.

To assist in working out details of interior arrangement a mock-up of four typical bays (space units of 18 by

LIBRARY MOCK-UP: To give designers and prospective users of the Firestone Library the benefit of “trial-and-error” experiments before the correction of an error became a matter of changing plans midway in the building process, a mock-up of four of the standard space units was erected in the Riding Hall.

The four units, each measuring 18 by 24 feet, were variously equipped with book stacks, study carrels and conference tables. Every conceivable type of light was installed (as a result of the experiments here incumbent, rather than fluorescent fixtures were chosen for the new building), a wide variety of floor coverings was laid down, carrels were arranged and re-arranged, and many tones of paint were applied.

Movable ceilings were installed in two of the space units. By raising and lowering these ceilings from the minimum of 7½ feet, 5½ inches to the maximum of 9 feet, 6 inches, what seemed to be the optimum height, practically and aesthetically, was achieved. It turned out to be eight feet, four inches.

It was in this mock-up that the Cooper Committee on Library Building Plans, an organization formed at the suggestion of President Dodds, headed in its early years by Julian P. Boyd and composed of representatives of institutions planning new library facilities, held one of its most fruitful meetings. These librarians and technicians voiced their preferences for the various installations in the mock-up and their opinions were helpful in determining which was best for the Firestone Library. A volume, “Planning the University Library,” based on the deliberations of this committee, will be published next month by Princeton University Press.

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PLANNING THE UNIVERSITY LIBRARY BUILDING

Edited by

John E. Burchard
Julian P. Boyd
Charles W. David

An exchange of the experience and ideas of a nationwide group of architects, librarians, and engineers. All aspects of library planning are considered, including air conditioning, modern illumination, windowless libraries, all-glass walls, flexibility, etc. The editors, who are members of the Cooperative Committee on Library Building Plans, also consider the important relationship of the library building to the educational policy of the institution it serves, and the vital need of teamwork between architect, librarian, and administrator. Mr. Burchard is director of Libraries at M.I.T.; Mr. Boyd, Librarian at Princeton; Mr. David, director of Libraries at the University of Pennsylvania.

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activity to relieve as quickly as possible Princeton's intolerable library conditions and to outpace rising prices, the quarter-century of discussions and planning was not lost in the shuffle.

Without the background of those years, the Harvey S. Firestone Memorial Library would not be the building it is today—the capstone, as President Dodge has said, of Princeton's educational structure and an inviting home for what President Davies so many years ago termed "the most ornamental and useful Furniture of a College."

**Solving the Architectural Problem**

BUILDINGS as well as people should be good neighbors. Any other available site would have been distinctly non-functional. Any other design would have been grotesque.

The interior space was arranged before considering the exterior. Efficient interior design has not been forced to give way to preconceived notions of external appearance.

The intent was always to create a building that would serve a vital educational purpose, and not, as has too often been the case in the history of college and university construction, to provide an architectural monument.

SUMMARIZED above are the three principal answers to criticism occasionally voiced about the architectural style of the Firestone Library. One critic, for example, has ridiculed "that timid and unhappy '48 Gothic' style of Princeton's new library", another has lamented the "Gothic sham exterior" and deplored "the modern plan encased in a late medieval frosting." Significantly those who have protested most vociferously have spoken before viewing the new building in its completed setting on the Princeton campus.

Internal requirements—the need for implementing as completely as possible the aims and needs of the Princeton pattern of education—came first. But from the beginning there has been definite agreement that the Firestone Library, when completed, should form with its surroundings a composition that would be a thing of beauty both now and for years to come.

All this, as any architect will verify, is easy to state but exceedingly difficult to accomplish. How it was done is the essence of this phase of the story of the Firestone Library.

With the site for the Firestone Library finally selected as the area in the northeast corner of the campus, the architects approached the problem of the relationship between the new building and its surroundings. To the architects, Robert B. O'Connor and Walter H. Kilham Jr., the relationship problem was threefold: a problem of space, architectural style, and scale.

The University Chapel, located just south of the site, is the spiritual center of University life. It is also a dominant architectural feature of the campus. The Trustees believed, and the architects agreed, that the final appearance of the Firestone Library, both in composition and in detail, must recognize this dual condition.

The Trustees further insisted that the architectural harmony of the campus had been and still is a factor of real meaning among the intangibles of a Princeton education. Such buildings as Witherspoon, Dood or Brown can be singled out as exceptions which severely try this rule. Nevertheless, those which seem to represent Princeton in the overwhelming majority of alumni are Nassau Hall and the long series of Gothic structures dating from Blair and Little Halls.

The Firestone Library, it was apparent, was to be surrounded by buildings of Gothic design. Only one other style was seriously mentioned for the new library—Colonial, stemming from Nassau Hall. Colonial architecture, however, would have formed a sharp contrast with the Gothic surroundings; and to the architects it presented extremely difficult problems of design in meeting the functional requirements of the internal plan.

One school of thought insisted that a building to meet modern conditions must be designed in the contemporary manner. But the natural reaction was: "What is the contemporary style, and how can the University be assured that such a design in fifty years will not be just another 'Witherspoon'?"

As the studies progressed, the architects gradually reached decisions regarding the site plan, scale and color.

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**LIBRARY ARCHITECTS:** Robert B. O'Connor and Walter H. Kilham Jr. (seated), architects of the Firestone Library, their associates and members of their staff: extreme left, Thomas B. Temple (exterior design); back row, Curt Swinnerton (furniture), J. G. Milmore (structural steel, working drawings), Paul Mehlke (office boy, blue prints), Addison A. Epp (job captain) and S. R. James (furniture); front row, Leroy B. Allen (specifications), Crandall Cochran (chief of technical design), Kemper E. Kirkpatrick (interior architecture, equipment and furniture), Philip M. Chu (working drawings), Richard B. Snow (interior design), Miss Teresa Kilham (color schemes and fabrics), Alfred Rundell (furniture) and Charles H. Koop (office manager, coordinator). Other key members not in the picture include: H. B. Guillian (exterior design), Frank E. Shattuck (program, research, working drawings), Norman L. Turner (working drawings), Cope B. Waldridge (working drawings) and R. Wilson Wingate '25 (clerk of the works and full-time worker on the job for the past three years).
composition. It was concluded early in the planning stage that the main entrance should be located approximately at the elevation of grade then existing at the main entrance to the Chapel. This would bring the court between the Chapel, Pyne Library and the new building up to a uniform level and help to provide light on the north side, an advantage which the natural slope of the ground already suggested.

It was further agreed that the south side of the Firestone Library, toward the Chapel, should be built as a permanent façade and that future expansion should occur primarily to the north. The treatment of the south façade accordingly was to receive the greatest amount of detail and the strongest recall of Gothic motives.

After setting these main elements in the plan, the architects provided a wide entrance court on the southwest corner to prevent the monotony which would have resulted from duplicating the deep narrow court between the Chapel and McCosh Hall. The decision to run the north walls parallel with Nassau Street insured that future expansion could be made in that direction as efficiently as possible. Setting the east end of the building at an angle to Washington Road tended to reduce the reverberation from vehicular traffic which has caused some difficulty between the parallel walls of Dickinson Hall and the Frick Chemical Laboratory.

Finally, and quite important, the form which the Firestone Library was to take on the southeast corner provided a secondary and smaller court between the new building, the north end of Dickinson and the John C. Green Engineering Building. The latter, located across Washington Road, thus could be brought into a studied relationship with the main campus. In addition the arrangement was designed to provide a sense of openness in front of the Engineering Building which a high parallel wall would have denied.

From an architectural standpoint, it would have been only too easy to have dwarfed the old library buildings and to have set up an objectionable competition of size with the Chapel. To avoid this, the architects gave careful attention to the problem of scale. Only in an aerial view, where the building appears as a very large cube, does the tremendous size of the Firestone Library become apparent.

In this connection, as well as with respect to color, the question of the type of exterior stone received very careful attention. The final selection—Foxcroft Stone from nearby Broomall, Pa.—had certain obvious advantages.

Aside from its soundness and relatively easy workability, Foxcroft could be obtained in really large sizes, and by making such a selection the scale of the building itself was reduced. Furthermore, it provided a color which tied in harmoniously with the different materials of the buildings in the immediate vicinity and presented a somewhat sturdier and less refined surface than the adjacent Chapel.

Foxcroft Stone was advantageous in one other respect. Windows in the Firestone Library are generally two and one half feet wide in comparison with

FROM THE AIR, the tremendous cubic content of the Firestone Library, which is not particularly apparent from any one viewing angle on the ground, is readily seen. For better comprehension of the points made in the “Solving the Architectural Problem” section, it is well to keep in mind that Nassau Street, at the bottom of the picture, is north of the building; and Washington Road, with a portion of the Engineering Building visible, lies to the east. South are Dickinson Hall and the University Chapel; and half of Pyne and Chancellor Green Libraries are visible on the right.

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The typical Gothic design on the campus of 16 to 18 inches in width. This increase in dimension was again minimized by using the much larger size of stone.

The Firestone Library, as Mr. O'Connor pointed out in the Alumni Weekly of January 24, 1947, "has grown from a close and unfettered appraisal of the educational functions which it is intended to fulfill, and it follows no previously prescribed form. By the process of giving height to the rooms the plan has developed into a three-dimensional structure. Only in the addition of the tower has any essential concession been made to mass. This feature serves to emphasize the entrance and to build up the composition with the Chapel.

"It is a fortuitous quality of the traditional Princeton architecture that it too developed historically to meet the peculiarities of a highly individual and varied plan. It has thus lent itself to the necessities of this problem without undue violence and has served without distortion of the functional form to tie the Firestone Library into the character of the surrounding buildings."

The Architects

In association in the office of the Zone II Constructing Quartermaster of the United States Army in 1941 resulted two years later in the organization of the architectural firm of Robert B. O'Connor and Walter H. Kilham Jr., architects of the Harvey S. Firestone Library.

Characteristic of the times, a large portion of the first commissions of the firm when it was organized represented the pressing needs of the war program: the U.S. Surplus Storage Depot in Linden, N.J.; additions to the Rhodes General Hospital in Utica, N.Y.; commission which was to hold the important place in the practice for the next four years. Mr. Kilham was already thoroughly familiar with the project, having made his first studies of it as far back as 1939, in association with Idee van der Graacht '23, and later with Harrison & Fouilhoux.

Mr. O'Connor, a graduate of Trinity College in 1916 and a captain in the field artillery in World War I, received the degree of Master of Fine Arts from Princeton University in 1920. After a year of European travel and study, he began the practice of architecture in New York City.

Entering the office of B. W. Morris, the architect of Seventy-Nine Hall, in 1924, he became a partner in the firm of Morris & O'Connor in 1935, in which he was active until Mr. Morris' retirement in 1941. Included among the many buildings designed by this firm were the Brearley School and the Union League Club in New York City, the Avery Memorial Museum and the Connecticut Mutual Life Insurance Building in Hartford, Conn., and the Northern Westchester Hospital in Mt. Kisco, N.Y.

In 1941 Mr. O'Connor took on the heavy responsibilities of chief engineer of the Zone Constructing Quartermaster's office in charge of all War Department construction (except fortifications) in New York, New Jersey and Delaware. Currently he is the architect, in association with Aymar Embury II '00, of the huge program of alterations and additions to the Metropolitan Museum of Art in New York.

Mr. O'Connor is a fellow of the American Institute of Architects, past president of its New York Chapter, and the recipient of its Medal of Honor for the year 1947. He is a member of the New York Building Congress, of Phi Beta Kappa and of Delta Psi. For a number of years he has been chair-

Platt'sburg Barracks; and other projects of a similar nature.

In November 1944 the Firestone Library appeared on the firm's horizon, a
A
n impressive ceremony was held in June of 1947 near the end of the University's Bicentennial celebration to mark the laying of the cornerstone of the Harvey S. Firestone Memorial Library. Next week, on April 30, another ceremony, more elaborate in plan, will mark the official dedication.

Yet on January 2, 1946, not a single trace of ceremony marked the beginning of construction of Princeton's long-awaited new library building. No silver shovels, no speakers ready to solemnize the occasion, in fact virtually no witnesses were on hand when a bulldozer moved into the area in the northeast section of the campus and began to clear the ground.

Only one moment of the occasion remains. G. Vinton Duffield, current chief of building and technical services and a member of Princeton's library staff for 43 years, came up early that morning to see if the work was really about to begin. He arrived in time to retrieve the first clump of topsoil, a clump which survives today with a rose bush growing from it in the Duffield garden on the Great Road.

In addition to the bulldozer, there were other signs of activity that morning. Workers were erecting wooden fences around the trees near the construction area to protect them from possible damage; a steam shovel, the first of many to appear, was digging drainage ditches; surveyors were re-checking measurements. Turner Construction Company was on the job, and work was about to begin in earnest.

From that morning in early 1946 until late fall of 1948, construction crews of all types dominated the scene. Virtually every building trade was represented as the architectural, structural and mechanical plans which had been formulated were transformed into the completed Firestone Library.

The original timetable, which had called for a completion date of July 1, 1947, was soon revised. Government restrictions on the purchase and allotment of materials, strikes, and slowdowns of a variety of subcontractor plants made it obvious that this job, like all others in the post-war era, was certain to run behind. A new schedule was prepared calling for completion in 1948 emanated from an appreciation of their common aims and their diversified capacities. Many members of the staff worked formerly either with Morris & O'Connor or with Van der Gracht & Kilham and nearly all eventually were involved in phases of the work on the Firestone Library.

In planning the structural engineering features of the building, the architects received invaluable assistance from the firm of Kopf & Pickworth, with R. W. Brown advising on structural steel and Henry Hofvelt on concrete. The mechanical engineering phase was facilitated by the services of the firm of Meyer, Strong & Jones, with S. W. Hay advising on heating and ventilating, L. J. Newman and S. C. Slavik on electrical work, E. W. Ketchum on plumbing and E. Weisheit on elevators.

Building the Firestone Library

CEREMONIES: In the closing days of Princeton's Bicentennial Year, the cornerstone of the Firestone Library was laid in approved fashion. As President Dodds, Paul Bedford '47, workmen and hundreds of visitors not shown looked on (left), David H. McAlpin '20 placed the traditional box in the stone. Harvey S. Firestone Jr. '20, acting on behalf of his mother and the Firestone family, then laid the stone (centre) under the watchful eye of President Dodds and Architect Robert B. O'Connor. Honorary membership in the local Bricklayers, Masons and Plasterers International Union, held by Mr. Firestone for the deed, was also accorded to President Dodds in June 1948 when he set, at the top of the tower, the last stone, the "pineapple" ornament in the northwest corner, used in the construction of the $6,000,000 building.
The Firestone Library, as viewed by Princeton's photographers from every point of the compass.
The Architect Pays A Tribute

ANY building is likely to be about as good as the company that builds it, and a vital element in the success of a company rests in the hands of the project superintendent. Princeton University was fortunate in having Turner Construction Company (Philadelphia office) as the builder of the Firestone Library. The University was also fortunate, as is the Turner Company itself, in having H. A. (Dutch) Schroedel as project superintendent. Dutch Schroedel had worked on Naval air bases in the Pacific for Turner Construction Company from May 1941 to August 1945. He was at Pearl Harbor when the Japanese attacked and received the Meritorious Civilian Award for “outstanding performance in the construction field over and beyond the line of duty.” With that background, participation in the early planning stages of the Princeton Library was a simple matter. He moved to the job on February 7, 1946, and lived in Princeton and vicinity for the duration of the work.

Throughout, Dutch was completely master of the building situation. Despite the difficulties and often nerve-racking delays and uncertainties of needed supplies, the operation proceeded with extraordinary smoothness. No opportunity to push the job along was overlooked and no inferior workmanship was tolerated. The builder’s office was humming continuously but never in confusion. A great deal is owed to him for his experienced organization of the work and his indefatigable energy. Not the least of his qualifications was his pervading good humor, which did not, however, extend so far as to let anyone get away with improper workmanship or materials.

Dutch Schroedel can look back with pride on the quality of the building which he had such a large part in producing. He can also take great satisfaction in the esteem and admiration which his qualities earned him on every side among the Princeton community.

H. A. (Dutch) Schroedel

ROBERT B. O’CONNOR


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October 1948. Despite a number of unforeseen obstacles, this timetable was maintained.

The Philadelphia office of Turner Construction Company was assigned to the Firestone Library project under the direction of Vice President E. R. Bear. In mid-February, H. A. (Dutch) Schroeder, Dartmouth '28, arrived on the scene to begin a two and one-half year tour of duty as project superintendent. The Turner emblem appeared on a frame building erected as headquarters on Washington Road, and the $6,000,000 operation was under way.

Planning a construction project of the magnitude of the Firestone Library is, in the words of Dutch Schroeder, "something like planning a military operation, with its supply lines, field operations and time schedules. In fact.

The 1877 Laboratory

Shortly before his death, in 1938, John A. Campbell, president of the Class of 1877 from graduation throughout his life, wrote to the University to extend permission to tear down the 1877 Laboratory when the time came to build the new library. In his

We appreciate participation in the construction of this splendid structure

METAL STAIRWAYS
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The 1877 Laboratory Plaque

generous letter he requested that a tablet be erected to mark the site.

The square, two-story brick building was razed in 1946. Nearly two years later, as the stone exterior of the new library was being completed, the original terra cotta plaque was placed, at almost the exact location, on the south wall of the Firestone Library.

Originally used by the Department of Biology, the building served many purposes following the transfer of the departmental equipment to Gray Hall in 1909. In the years preceding its destruction, it housed the Bureau of Urban Research, the sculpture studio of Joseph Brown and the plastics program of the School of Engineering. The 1877 Laboratory was presented at the tenth reunion of the class. Among other gifts which it has made to the University is Campbell Hall, named in honor of its president for life.

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STONE WORK on the Firestone Library was one of the most extensive operations of its kind ever undertaken in this country. Working under the supervision of Joseph Mandes Sr., a veteran of sixty years in the trade, a group of 30 skilled masanes split, dressed and laid 5,000 tons of Foxcroft Stone for the exterior of the building. In the operation, large slabs stored at Patten Neck (left) were brought to a shed on the site to be split and dressed with various specialized tools.

several of the purely operational drawings of the Turner Construction Company look more like a battle plan than a construction drawing, with symbols indicating the routing of men, machinery and materials, as well as sources of possible casualties on the job."

With the three lower floors of the new building designed to be below the entrance level on the south side, excavation was a major undertaking. The grade was 31 feet below the ground surface at the deepest point; and the excavation involved the removal of approximately 100,000 cubic yards of material, one third of which was rock. Disposal of this quantity of dirt was in itself something of a problem. It was solved by topping off a low spot behind the Vivarium to provide a new athletic area—Pardee Field—adjacent to Poe, Goldie and Bedford Fields, and by filling a nearby abandoned quarry owned by the University.

Blasting operations went on for six months, and the proximity of the University Chapel with its valuable stained glass windows caused great concern. Dynamite was completed without damage to the adjacent buildings, however, and only minor inconvenience was caused to the Frick Laboratory chemists whose scales were constantly knocked out of adjustment.

To protect the Chapel windows, blasting experts from du Pont arrived on the scene and set up a Vibrograph beside the building. As each blast went off, a seismograph was recorded on film. By checking the results with calibrated charts, the experts determined the maximum amount of subsequent charges to prevent damage to the Chapel and other adjoining buildings.

By the summer of 1946 the Class of 1877 Laboratory on the south edge of the excavation had been demolished. One section of the old-shaped Brackett Dynamo Building, the surviving remnant of the old School of Science, was also torn down at the time. The major portion of the small structure was, however, used as a construction shed before it too was razed in June of 1948.

In May, Princeton's famous landmark with the wanderlust, the Joseph Henry House, moved for the third time in its 117-year career. Built by the famous electrical inventor in 1832 on the site of Reunion Hall, the famous dwell.

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THE CIRCULATION DESK, before and after. On the left, a picture taken June 24, 1948, workmen are installing the frames on which the handsome English oak panels were to be mounted. On the right is the completed area, strategically located in the center of the building and, except when this picture was taken, in constant use.
BUILDING THE FIRESTONE LIBRARY: A two-year interval separates the top left picture from the bottom right in the group above, a panel of highlights in the construction of the Firestone Library. Shown pictorially are: excavators pushing ahead in the early spring of 1946; the same time, from a different angle, with the site where the best specimens of Osteolepsus newarki were found visible just beyond the shadow of the Dynamo Building; the 1877 Laboratory razed after 40 years of service; the nomadic Joseph Henry House on the move again; reinforced concrete reaching the floor of A level; an aerial view showing the top of concrete columns ready for structural steel; the four guy derricks in operation; and the stone work on the exterior of the building in its final stages in the spring of 1948.
CEMENT MIXER: In the summer of 1946 a complete mixing and batching plant was erected on the south edge of the excavation pit to provide 18,500 cubic yards of concrete for the Firestone Library.

ing had been moved in 1870 to a location near the University Chapel and in 1925 to the corner of Nassau Street and Washington Road.

Although only the back porch was in the actual excavation area, the long-standing residence of the Dean of the College went up on jacks in May and started the long trek to its new location on the front campus just to the north of Chancellor Green Library. In the process a 20-inch maple tree was dug out and later replaced to allow passage to the new site.

A favorite remark at the time went as follows: “If Joseph Henry had been the really great inventor that history says he was, he would have built his damned house on wheels.”

Concrete pouring—the three lower floors are reinforced concrete—began even before the excavation was completed. A complete mixing and batching plant was set up at the south edge of the pit with sufficient storage material for a two-hour pour. Replacement of the used material was easily taken care of from Morrisville, Pa. The concrete plant gave the job complete control over the design, weighing, mixing and placing of the concrete.

The top three floors of the building were built of structural steel with two-inch concrete fireproofing, and the crew of steel workers arrived on the scene in February 1947. Four guy derricks were used in the operation.

Stonework began in April 1947 and continued through the following February. Requiring 5,200 tons of Foxcroft Stone, the project is believed to be perhaps the largest of its kind ever undertaken in this country.

Named to supervise the drilling, dressing and setting of the exterior stone was Joseph Mandes Sr., a veteran of sixty years in the trade, whose presence on the job assured the highest type of workmanship. A total of 39 masons were employed at the job peak. Most were Italians, nearly all of whom had learned the trade in their native

MATERIAL from all parts of the world arrived in Princeton from 1946 to early 1949 for the exterior and interior of the Firestone Library. A request addressed to the architects’ office for a sampling produced the following data collected by Richard B. Snow.

Although the Foxcroft Stone of the exterior traveled only from nearby Broomall, Pa., some of the interior stone and marble came from overseas: the light-colored travertine in the entrance hall from Peru, the green marble from the French Pyrenees, the columns from Italy.

The marble, when imported, arrived in large, drab chunks and had to be sawed into slabs and polished to give it its final character. All this work was done in Vermont and shipped from there to the job. The Albemere Stone, used for the base of the first floor, was quarried and shipped from Virginia.

The limestone, used for the ornamentation and trim, was quarried and carved in Indiana. To control the operation exactly, since the stone was not being carved on site, the architects used full-size plaster models of all the special work. These were executed in

land where stone is the predominant building material.

In the operation, large pieces of the Foxcroft Stone, weighing from two to six tons each, were trucked to the building site from a storage area at Penns Neck. At the site they were reduced in size by drilling lines of holes and splitting each piece with wedges. The resulting blocks were then dressed with air hammers to fit into place in the structure. The actual selection of size

AIR-CONDITIONING INSTALLATION: Designed for complete ventilation with filtered air, the Firestone Library was equipped with refrigerating units for summer cooling in only a few selected areas where the storage of manuscripts or other fragile material demands a closely controlled climate. The entire building, however, is ventilated by interior ducts (above) which could be used for refrigerated air-conditioning at a future date in other areas if deemed desirable.

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JOSEPH MANDES
Masonry Construction
Rosemont, Pa.

Cooperating with the Turner Construction Company in the supervision and setting of the Stone Masonry Work on the Princeton Library.

ROSS ELECTRIC CONSTRUCTION CO., Inc.
PHILADELPHIA 22, PA.

Electrical Constructors on Large Industrial and Engineering Projects Since 1918

ELECTRICAL CONTRACTOR ON NEW FIRESTONE MEMORIAL LIBRARY PRINCETON, N. J.
was left to the man on the scaffold with Mr. Mandes keeping a practiced eye on the finished job.

Inside, the concrete ceilings and columns of the lower floors were rubbed and painted and asphalt tile was applied as the principal floor covering. Areas in the upper floors were treated with marble, travertine, extensive millwork and cabinet work (American oak, English oak, cherry, knotty pine and birch). Ceilings were covered with acoustical tile or applied acoustic plastic. Floors were laid in wood, asphalt tile, rubber tile or terrazzo.

Careful planning, scheduling and expediting of the contracts with the 64 sub-contractors resulted in construction proceeding according to the revised plan. Book moving began on July 6, 1948; the staff transferred operations to the new building in early September; and the Firestone Library was ready for use at the opening of the fall term of 1948.

Builders of the Firestone Library

THE Turner Construction Company, builders of the Firestone Library, began business in 1902. In the 47 years that have elapsed, it has built over 2,000 buildings of nearly every type imaginable, at a total cost in excess of $900,000,000, included in the total are more than 500 factories, 125 warehouses, 80 office buildings and 33 power houses as well as libraries for Girard College in Philadelphia and the New-York Historical Society in New York.

During the war the Turner Company branched out into coal mining, management of the Atomic Village of Oak Ridge (which it still manages today), construction of 102 oil tankers of 22,500 tons, and, in association with two other contractors, over one billion dollars of Naval procurement. As one of the initial group of three contractors who operated under the synthetic name of PNAB, it carried out the largest contract of its kind awarded in World War II: the construction of fleet and air bases in Hawaii, Midway, Wake, Guam, Manila, Palmyra, Johnston and Samoas. Out of this activity was organized the Seabees, the Navy construction battalions.

The Turner Construction Company was founded by Henry C. Turner, who continues as a director. His eldest son, Henry C. Turner Jr., has been president since March 17, 1947. The permanent or straight-time staff currently numbers 550 men and women. On the 42 contracts which it has under active construction at the present time, it is employing over 5,000 men.

The staff for the Firestone Library contract included: H. A. Schroedel, project superintendent; L. E. Gartner, mechanical superintendent until his death in December 1947; W. E. Shaw, assistant superintendent and acting superintendent in May 1948; Joseph Mandes Sr., superintendent of stone work; J. F. Carroll, R. P. Marshall Jr. and J. Stephens, assistant superintendents; B. Kelley, lines and grades; M. C. McEver, job accountant; and W. Schlosser, timekeeper.

Operation Firestone—Moving the Books

JULY 6, 1948, was D-Day for Operation Firestone. At an early morning hour ten-year-old Kenneth Boyd appeared at the temporary exit cut into the south wall of the courtyard of Pyne Library and started across a long wooden ramp. He was pushing a small wooden cart and was heading for the Firestone Library. The tremendous operation of moving Princeton University’s collection of 1,000,000 books was on.

Months of planning had gone into the project that began suspiciously that morning and months of hard work lay ahead. It was a hot day in July when the first volume was placed on a Firestone Library shelf. It was a cold day in December, just after the first snowfall of the winter, when the final volume was retrieved from one of the dozen isolated storage areas and moved across to its new home.

None of the hundreds of people who became involved in the project will probably forget the experience, particularly British-born L. James Lee of the library staff, who attended it directly from beginning to end, and the 37 undergraduates registered with the University’s Bureau of Student Aid and Employment who handled the bulk of the work.

Throughout the summer, from the first day of moving in July through the second week of September, two undergraduate teams of 14 men each worked steadily on a five-day and occasional six-day week. Morale was high, competition between the teams was intense, and the desire to do a quick, but careful, job was evident on all occasions. Later, after classes had resumed, a 15-man crew, made up of nine summer veterans and six newcomers, took over and carried on for four hours each afternoon until December 15.

OPERATION Firestone, as the project was commonly known, was one of the most ambitious projects of its kind ever attempted by any library. Waiting until the new building was completed would have simplified it; but the summer seemed to be the

FIRST LOAD: Kenneth Boyd, 10-year-old son of Princeton’s librarian, pushes the first load of books across the ramp to the Firestone Library.

The Ramp

LAST LOAD: Dwight F. Ewing ’30 celebrates the end of the summer phase of Operation Firestone with a free ride for his wife, Barbara Ewing.
THE HALFTONES AND ZINC LINE CUTS
IN THIS FIRESTONE LIBRARY ISSUE
ARE THE WORK OF

Empire

PHOTO-ENGRAVING CORPORATION

Newark, N. J.

New Brunswick, N. J.

ART METAL STEEL BOOKSTACKS
in FIRESTONE MEMORIAL LIBRARY

Firestone Memorial Library represents the most recent and largest installation of Art Metal Bracket Bookstacks since the end of the war. Covering over 155,000 square feet of floor space, Art Metal Special Unitype Bracket Bookstacks have been installed on six main floors. All stacks are of a free-standing single tier type and are securely bolted to the floor for rigidity, eliminating the need for tie rods between stacks for support. Other features include metal screens which separate portions of the stacks for special uses.

Other recent Art Metal Library installations have been made at Harvard University, Duke University, Alabama State Teachers College, St. John's College. Many other nationally known schools and universities throughout the United States have been equipped with Art Metal Bookstacks during the past thirty years.

Art Metal Construction Company

JAMESTOWN, NEW YORK

only expedient time to effect the move. Suspending all library service during all or part of the moving time would have made the task comparatively easy; but a university rebelled against the idea of depriving its students and faculty of library books and facilities, even during the slack summer months.

Throughout the summer, while their books were being removed as quickly as possible, Pyne and Chancellor Green Libraries were in fairly normal operation. The library staff had pledged that no book requested would be unavailable for more than four hours. By using pages to retrieve volumes already transferred to the Firestone Library, the staff lived up to its word.

Labor Day weekend, when the library would normally be closed in any case, was the big occasion for the staff as well as the moving crews. On September 3, working all day and under lights at night until 11 p.m., the crews moved the processing and cataloguing departments and the Public and Depository Catalogue. The next day, tired but still enthusiastic, they tackled the reference and circulation departments. The movers had met their schedule by 5:00 p.m. and, with many of them volunteering to work inside over the holiday, the Firestone Library was open for business on Tuesday morning for the first time.

The following Saturday marked the close of the summer phase of the moving operation. On the previous evening, the undergraduates had celebrated the end of the job at a party given by Mr. and Mrs. David H. McAlpin and Mr. and Mrs. Julian P. Boyd at the McAlpin home just outside of Princeton. On the final day, following a full morning's work, the group assembled for a picture, received a message of thanks from Mr. Boyd and their checks from the Bureau of Student Employment, and departed to enjoy a one-week vacation before the opening of the fall term.

LONG before the first load of books moved to the Firestone Library, details of the operation had been carefully worked out by a five-man committee composed of Mr. Boyd, Mr. Lee, Lawrence Heyl, G. Vinton Duffield and Malcolm O. Young.

The problem, as the committee viewed it, was that of moving books, furniture, equipment, supplies, museum objects, maps, paintings, glass-mounted papry and countless other articles from many different buildings. Most were in Pyne and Chancellor Green, of course, including their fabulous cellars and dungeons. But 80,000 volumes and the Gest Collection of Oriental Literature were stored at 20 Nassau Street; stack books and many rare books were in two basement rooms in Dickinson Hall, and in the University Chapel Crypt; a large number of duplicates and unbound items were in underground areas of Holder and Brown Halls; and nearly all of the departmental libraries had an accumulation of older journals and seldom-required works which they wished to send to the main library stacks.


The Cornerstone Box of the Firestone Library

A SMALL lead-coated copper box, set in the cornerstone of the Firestone Library, placed there nearly two years ago just before Harvey S. Firestone Jr. ’29 laid the stone on the southeast corner of the Reserve Reading Room. Within it is a variety of items relating to Princeton libraries and the contemporary scene; and a certificate, signed by Julian P. Boyd, George A. Brackley ’07, J. Douglas Brown ’19 and G. Vinton Duffield, that the box “was duly sealed in their presence on June 12, 1947.”

Included among the items are the following: a Bible, a University catalogue, directory and telephone directory, a Graduate College catalogue, a photostatic copy of “A Catalogue of Books in the Library of the College of New Jersey” (1863), a Bicentennial announcement and memorial and eight records of conferences held during the year, pamphlets of the Third Century Fund and the Industrial Relations Section, a “Guide to the Princeton Campus,” “Princeton Past and Present,” “Camilla Princetoniana,” a biography and photograph of Mr. Firestone and the memorial issue of the company publication, a copy of the New York Times, Princeton Herald, Princeton Packet, Daily Princetonian, Alumni Weekly, Library Handbook, Library Chronicle, Green-Prune Leaf and Architectural Record, the Librarian’s Annual Report, specimens of library bookplates, photographs of a library model and the specimens of Osteoprotus swariki, a few United States coins, lists of the names of the library staff, and architectural, engineering and construction firms, and, finally, a pleurisy of a letter from Thomas Jefferson to Ebenezer Hazard on the importance of preserving records.
In the early stages of planning the committee worked out a system whereby books least likely to be called for were to travel first, followed by books in increasing demand. At the end, when the library services were ready to be moved, the books in greatest demand would travel, in a sense, with the administration. This process depended entirely on all of the Firestone Library being ready at the beginning of the move. Such was not the case. Only level B was ready by July 6, with additional floors opening up gradually during the summer months in the following order: A, C, main level, 3 and 2. Plans were modified to fit the construction schedule.

The decision to use book trucks or casts for the major part of the operation was made only after careful consideration of the procedures of other libraries and a review of experience gained while moving Princeton books to all parts of the campus. A long wooden ramp, covered to permit operations on rainy days, was constructed between the new building and the courtyard of Pyne; and two openings to the stacks were cut at the second floor level.

When the committee learned from the manufacturer that the 30 specially-designed wooden book trucks which it had ordered could not be delivered on time, it accepted as a substitute 15 metal pick-up trucks (54 inches long and equipped with six wheels) made for use in Woolworth stores. By fitting them with wheels and ropes and by limiting the load to the two bottom shelves to keep the center of gravity low, the movers adapted the trucks to the job. In addition 11 of the regular library carts were assigned to duty in the operation.

In May the decision was made to award the contract to the University's Bureau of Student Employment rather than to professional movers, and on the evening of July 5 the group assembled in the Trustees' Room for a last-minute briefing. In addition to an explanation of the details of the operation, the undergraduates heard a reminder from Mr. Boyd of the great need of care for the safety of the books and of the need to conduct the operation without interfering with the workmen still on the job. Both conditions were faithfully observed to a remarkable degree.

The moving crews were divided into two teams, each with a foreman at the loading point, two men to load, eight men to push, two to unload, and an assistant foreman at the unloading area. A schedule calling for movement of truck loads at five-minute intervals was worked out, with each round trip...
expected to take an average of forty minutes. An estimated total of 23,500 books were transferred on the first day, and the crews maintained a steady pace, when the construction schedule permitted, throughout the remainder of the operation.

"There was little to choose between the two teams," Mr. Lee notes in a detailed report on the entire operation. "The 'A' team, composed of physical stalwarts, preferred to work in bursts of power, discussing current affairs during idle moments. The 'B' team, men of lighter build, was conspicuous for its steady and constant speed. Temporary stoppages of the elevators were serious matters to them, and any interruption in the steady flow of books was lamented."

Of the 29 men in the summer crew, he noted, over 90 per cent were veterans. "This service was no doubt one of the reasons for their successful work. Being trained to comply with what were, to us, requests rather than orders, and having the spirit of ready acquiescence and cooperation, there was never any hesitation in going ahead with an intelligent understanding of what might have appeared at times to be an illogical sequence of work. It was all part of the plan and they responded promptly and cheerfully."

One difficulty in the operation was the fact that the contents of a particular section in the new building might come from as many as five places in Pyne and other buildings. To minimize this difficulty, space for sets of books to come was reserved by using some 600 brilliantly-marked wooden dummies, on each of which was noted the call number, the number of feet or inches required and the place of departure.

Late in July part of the group shifted to 20 Nassau Street. Eighty wooden boxes had been made to transfer, by van, the Gesto Collection and other books in this area. The boxes were lined with Navy blankets to protect rare books and those with old or fragile bindings. The movers, conscious of the need for extra care, were relieved when this phase was completed and the report was received that the material had arrived safely in good condition.

Furniture, equipment, pictures and other material were transported, interspersed with the books, to the Firestone Library throughout the summer. A large storage space area was created on B level, and every possible book and object was brought across while the ramp was still up. Had such items been left until their permanent locations were ready, Mr. Lee estimates, moving would have taken nearly three times as long.

When the ramp was finally removed in early October to allow paving operations and landscaping to begin, the remainder of the moving project continued with vans. Pyne Library was finally cleared, as were all the storage areas scattered throughout the campus.

Miscellaneous volumes from the departmental libraries were the last to be transferred to the new building. By December 15, the amazing undertaking known as Operation Firestone had reached an end.

ANTIOCH MOSAICS: A trip to the A level landing of the main stairway and to the east wing of the second floor will reward the Firestone Library visitor with the opportunity to examine the two mosaics reproduced above. Two of the six permanently exhibited in the new building, the mosaics are part of a large group acquired by Princeton University as a result of a joint expedition. One of the highlights of the expedition was the discovery and making of several hundred mosaic floors which adorned the public buildings and the houses of wealthy citizens of the luxurious city of Antioch, capital of the Seleucid Kings.

The complete group of mosaics, one of the richest stores of documentation for that form of art ever found in any ancient site, from an unbroken series dating from the first century through the period of Justinian in the sixth. Milestones from pagan to Christian times, they make it possible to trace, as in no other way, the change in pictorial and decorative style that occurred in late classic times and led to the formation of Byzantine art.

The record of nearly a thousand years of existence of the ancient city of Antioch, the capital of the Near East under Roman rule and an important center of the Byzantine Empire, was explored from 1931 to 1939 by a joint expedition of the Musees Nationaux, the Worcester Art Museum, the Baltimore Museum of Art, Dumbarton Oaks and Princeton University. Four volumes published by Princeton University Press report the various campaigns and theifty deals with the Antioch mosaics.

The two mosaics above were both executed about 250 A.D. The peacock, discovered in a villa in Daphni, is a suburb, and the geometrical pattern in Antioch. In addition to the six mosaics in the Firestone Library, a few other mosaics of the Princeton group are exhibited in the Art Museum and in McCormick Hall. The large majority, however, remain in storage for lack of space in which to display them.
Using the Firestone Library

When the challenging statement which appears below was written, only the bare outline of the Firestone Library was visible on the excavated site at the northeast corner of the campus. The Alumni Weekly of January 24, 1947, was presenting on its cover the first published rendering of the exterior of the new building; and on inside pages the University's librarian was setting forth for alumni, faculty and students a graphic description of the interior and what its facilities would mean to the Princeton pattern of education.

In the two years that have passed since that time, the bare outline has matured into the completed Harvey S. Firestone Memorial Library. For eight months now its doors have been open, its facilities have been used, its challenge of enlarging the horizons of the mind has been put to the test. Already the high hopes held for Princeton's new library have been fulfilled. Above the entrance might well be written: "Through these portals pass the most satisfied library users in the world."

The words of satisfaction of these users, freely expressed, would back up the claim that the high hopes of the planners have been fulfilled. But three groups of statistics gathered over the course of eight months lend additional weight to this categorical statement of fact.

There were hopes that the new library would encourage an even wider circulation of books. Statistics since September indicate a 20 per cent increase in circulation over a similar period last year, when undergraduate and graduate school enrollment had reached a peak.

There were hopes that the "open stack" policy would draw library users to every corner of the building and eliminate in fact the barriers between a student and his books. Statistics since September indicate that little more than...
five per cent of the volumes checked out at the circulation desk have required "paging" service; all others were selected by the users themselves directly from the shelves.

There were hopes that the Firestone Library would indeed become a campus workshop, particularly for the 2,500-odd group of undergraduates, graduate students and faculty in the humanities and the social sciences. Statistics since September indicate that an average of 3,500 users pass through the entrance gate each day, with a record of 4,658 reached in one 16-hour period on March 21, the Monday of the week of mid-term tests.

There is in these entrance figures evidence of heavy duplication, as men leave and return to continue their studies after an errand, a meal or a class. But such duplication is in itself a tribute to the Firestone Library. A building which is merely a repository for books—to be checked out and then returned for storage—is not likely to be visited by a student more than once a day at

ON THE MAIN LEVEL of the Firestone Library is the spacious Entrance Hall, viewed in the top and center left pictures from opposite directions. Passing through the door, the visitor faces the circulation desk and its decorative clock, the main stairway leading down to the A, B and C stack levels, and up to the second and third floors. The Reference Reading Room, with a portion of the Dixon Shelf in the foreground, is seen in the upper right through the great glass screen separating it from the entrance hall. The Reserve Reading Room, also viewed through glass, appears in the lower left; and on the lower right is a close-up of its unusual reading balcony, suspended by rods from the ceiling beams and reached by what one librarian calls "a frankly unadorned stair and landing." A reading terrace leads off to the left.
JEFFERSON OFFICE: The public and private papers of Thomas Jefferson constitute, as one scholar said years ago, "the greatest treasure house of information ever left by a single man." Under the editorship of Julian E. Boyd, the Princeton Jefferson enterprise plans to publish the entire body of Jefferson's papers and thus to make available to scholars in many fields, as well as to the reading public generally, the encyclopedic range of Jefferson's interests and accomplishments. A grant of $200,000 from the New York Times Co. launched the undertaking. Princeton University Press will publish the work in an estimated fifty volumes.

In the Jefferson Office in the Library are gathered photostats (a portion of which are shown above with Assistant Editors Mimi C. Bryan and Lyman H. Butterfield) of over 50,000 letters written by and to Jefferson; official documents emanating from his hand; the records of his work as lawyer, architect and scientific farmer, his account books meticulously kept from 1767 to 1826, his studies in Old English and in American Indian languages, his literary works, his maps and surveys, etc., etc., almost ad infinitum. The photostats have been drawn from original manuscripts in most of the great libraries and archival repositories in the United States and from others in a dozen foreign countries. In addition, several hundred collectors, dealers, clubs, schools and business firms have granted the use of their cherished autographs in this definitive presentation of our philosopher-president's archives.

A library which is truly a work shop, a "humanistic laboratory," is in constant use.

THE Firestone Library may be visited with many objectives in mind. The casual visitor, for example, does well to follow the route prescribed in a pamphlet prepared for his use, a route planned to give a representative view of the main floor, typical stacks, seminar, lounge and carriage arrangements on A level, and the rooms housing special collections on the main and second floors on the east end of the building. He is inclined to agree with the advice in the pamphlet that "any additional area covered would be repetitious and would seriously interfere with the use of the Firestone Library for study."

A visiting librarian logically broadens his tour to include, among other objectives, a visit to the Preparations Department, located in an ell-shaped area in the northeastern portion of the main floor near the Public Catalogue.

A visiting technician is eager to look behind the scenes at the myriad details which have contributed to a building recognized as a successful piece of "educational engineering." And the really curious visitor is, of course, not satisfied until he has pored into everything and has climbed up and down the 215 steps from the top of the tower to the pump room below C level.

It is, however, the visitor who is primarily interested in seeing the library in use with whom this section is most concerned. He is the visitor who casts a discerning eye on the significant details of planning embodied in Princeton's new library. He is the one who seeks to learn for himself whether, for the student, this is indeed a large library where books have been made "conveniently accessible for your study and for the enlargement of the horizons of your mind."

Passing through the turnstile gate into the spacious Entrance Hall, this visitor passes to look around. Except for the decorative clock on the north wall, he is aware of an absence of ornamentation, creating a business-like air. The use of plate glass set in stainless steel frames for two of the walls provides visual passage and an invitation to proceed further. The general tone of the area, he decides, is cheerful and lacking in the somberness all too common in institutional libraries.

Slightly to his right as he enters is the circulation desk, the nerve center of the library. In contrast to older and more traditional buildings, where he might have climbed flights of imposing stone stairways or traversed several corridors to find this department, he has reached the heart of the library by taking only a few steps. Outside, on the sunlit piazza, he had already walked on top of three floors of the building. Inside, he is immediately confronted with the circulation desk, where he may establish contact with any one of the million or more books in the Library System.

He is, with unparalleled ease of access, not only in touch with the heart of the library machinery; he is also standing in the vertical center of the building. This fact is perhaps the most striking example of the planning for accessibility and for convenience that characterizes the entire evolution of the Firestone Library.

A discerning visitor, he notices, as he glances at the floor plan in his Visitor's Guide, how compactly the first floor is arranged, how every element is focussed on the circulation desk at the center, how "open" the surroundings appear. He will not know, perhaps, how many months of preparing rough sketches, flow charts, drawings, blueprints and work plans went into the creation of this apparently simple and convenient plan—or how many revisions and new starts had to be made before it was possible for reading rooms, catalogues, bibliographical collections, exhibit space and all the other public areas to be spread out before his immediate view as he entered the building. But he sees the result. He does not have to ask at an information desk or consult a bulletin board to find out where the catalogue is. There, straight ahead, is the inventory of more than two million cards, giving him information about authors and subjects, is in plain view.

Just beyond is the so-called Union Catalogue, listing more than two million volumes in the Library of Congress and in other libraries throughout the country. Next to it, on open shelves, are the bibliographical collections providing data about books on every conceivable subject to be found in some library somewhere. One sweep of the eyes takes in the tools that enable a student to find his way about in this library and in all libraries. These are.

PRINCETON ALUMNI WEEKLY ★ 41 ★
THE COLLEGE OF NEW JERSEY LIBRARY: In a setting, viewed behind glass, which suggests an eighteenth century room is the symbol of the beginnings of Princeton’s library, a unique attraction in the Special Collections Area of the Firestone Library. Assembled in the room are books from the libraries of Governor Jonathan Belcher, President Jonathan Edwards and President John Witherspoon. Witherspoon’s desk and side-chair add authenticity to the setting.

The quiet room only seems inactive. It is in fact surcharged with currents of thought flashing with the play of imagination, crackling with intellectual activity. That boy over in the corner who seems to be drowsing may actually be the most wide-awake being in the place, moving with incredible rapidity along the corridors of time and space. But the visitor can only experience this vicariously as he notes the dignified simplicity and appropriate spaciousness of a room superbly fitted to its purpose.

THE DIXON SHELF: On the left of the Entrance Hall is the popular alcove in the Firestone Library where recent fiction and non-fiction books are shelved. The fund under which these books are purchased was established in 1919 as a memorial to William Boulton Dixon ’15, killed in action in World War I.
passageway, the visitor begins to comprehend the distinctive plan of the Princeton Library. A departure from the traditional library building pattern, each floor, other than the main level, embraces a related group of departmental areas.

Each area, he notices by reading plates on the north side doors and looking in at an occasional room, contains several seminar rooms and graduate study rooms equipped with tables and comfortable chairs, two offices for faculty members serving as research advisers, and a group of carrels. All are located next to the shelves carrying books classified in the subjects directly related to that department. The various areas are grouped on a floor in a logical plan; the social sciences together on A level, English and Modern Languages on B level, and so on. Also on the floor is a special lounge shared by the departments. Handsomely furnished, the lounge serves as a study area and as an ideal location for conferences and small meetings. All told, there are four such lounges, 14 seminar rooms, 15 graduate study rooms and 494 carrels.

When he reaches the central east-west passageway in the stack area, he is reminded somehow of a stateroom deck on an ocean liner. Running 330 feet in length, the passageway is long and straight; the wall partitions suggest stateroom doors, the flooring and lighting bear a strange similarity, and, persuasively, the faint sound from the ventilating system is reminiscent of the engines of a liner.

Here, the visitor observes, is the "humanistic laboratory library" in action—tiers after tier of steel bookshelves with their classified branches
of knowledge: students going to and from the shelves to select at will what they need in their explorations through the variegated fields of science and building up by this selective process their own small "libraries" set apart for their personal use in the carrels; a faculty member in a nearby office ready to consult and guide the junior partners-in-learning; conference rooms where one may lounge, read, smoke or talk; and browsing alcoves in the stacks. But these deserve special mention, for they constitute an original and distinctive feature of the library.

As the visitor walks along the corridors, he finds the regimented lines of the steel shelves broken occasionally by what seems to be an oasis of light and color. On investigation, he finds a small area about 10 by 14 feet, surrounded by bookshelves. In the center is a table; around it are comfortable chairs of modern design, covered with bright fabrics and conveniently placed near floor lamps. What strikes the visitor is that he seldom comes upon

Looking Closely at Firestone Library Details

RACKS: Included in the equipment in the Reference Reading Room is a newspaper rack, specially designed for the Firestone Library; a periodicals rack of standard holders in a special case designed to meet space and load requirements; and a double atlas rack and a dictionary stand. Both are equipped with slanted tops to facilitate easy reference.

DEVICES: In each of the 494 carrels is an unusual lamp, designed by G. Vinton Duffield, with an adjustable arm on a swivel which also slides from end to end of the underside of the bookshelf; the receiving end of the conveyor, built to carry books around a right angle to the circulation desk; the night book return chute, opened whenever the library door is locked and equipped with a spring-load repository box which insures that no book will drop more than a few inches when it leaves the chute; and the releasing catch for each door of the main stairwells. The theory behind the last device is particularly interesting and revealing. Open stairways to books, Princeton's library planners argued, have a definite psychological advantage in "removing the barriers"; but open stairways are a hazard in case of fire. The release catch solved the problem. Above each is a thermostat which closes the door automatically and sounds an alarm in case of fire. In addition, push buttons at the circulation desk can release automatically any or all catches in the building.

THE PAGE SYSTEM: Although 95 per cent of the books checked out of the "open stacks" of the Firestone Library are brought to the desk by the borrower, the library maintains a well-devised page system to obtain volumes from any point of the library on call. Equipment used in this system includes the pneumatic tubes at the right of the circulation desk whereby orders may be sent to any floor. When the order is received at one of the five page stations (right), the book is located on the shelves and sent up or down to the circulation desk on the book conveyor. The outgoing conveyor at the desk, shown in greater detail in the center picture, delivers books by automatic controls to any floor.
one of these browsing alcoves (there are several on each floor) without finding it occupied by one or more students. He may wonder why this is so, since there are ample seats to be found in many other parts of the library. The reasons are various but all are sound.

One student may be browsing among the nearby stacks to make his selections for his own "carrel collection." He may select 40 or 50 volumes from the stacks; all, he is sure, will be suitable for his purpose. He therefore sits in the browsing alcove, runs through tables of contents and indexes, puts aside those of no value for his purpose — leaving them on the table so that the trained shlepers can return them to their proper places — and carries back to his carrel perhaps half a dozen books that he really needs.

Another student prefers a quiet nook, where three or four can sit, to a large reading room accommodating two hundred. Another finds it a good place to spread out a large atlas or folio volume. Another is just reading at random among the stacks, containing books on the subject in which he is searching for a thesis topic.

Whatever the purpose, the browsing alcove has been tried by the students and found to be useful and good. The planners of the building, departing from the traditional reading room of monumental dimensions and overpowering grandeur, seated the student right down to the bottom when they metaphorically took a large reading room, broke it up into convenient, colorful fragments, and sprinkled these throughout the large stack areas. The proof of the pudding is found in the constant number of students who are to be observed eating it — and in the fact that many other institutions now plan-

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CHECKING OUT: At the exit of the library, Col. Edward Jenkins, U.S.A. Ret., supervisor of the checking desk, inspects the books of an outgoing student. Set up primarily to guard against careless book removal by absent-minded scholars, the checking desk is manned constantly by Colonel Jenkins, David Dove and undergraduate assistants.
The Decorative Bosses of the Firestone Library

Mark of Aldus Manutius
Printer at Venice (1590)

Mark of Etienne Dolet
Printer at Lyons (1542)

“The Ship of Fools”
Bergmann von Olpe (1497)

Mark of Simon Vostre
Printer at Paris (1590)

Biblomaniac Engraving
From “The Ship of Fools”

Mark of Geoffrey Tory
Printer at Paris (1597)

Book Ornament
Used by Simon Vostre

DECORATIVE BOSSES: Mounted near the top of the exterior walls of the Reference Reading Room of the Firestone Library are groups of eight sculptured bosses, based on printers’ marks and decorations of the fifteenth and sixteenth centuries. Selection of such marks for the subjects of bosses was based not alone on their picturesque character but on the close cultural and historic ties which they symbolize between the early printers and a great modern library. Many velvety prints by these craftsmen are, moreover, to be found in the rare book collections of Princeton University.

Reproduced in the top panel are plaster models of the eight bosses selected by the architects for the exterior walls; below are three of the more interesting printers’ marks on which they are based. The original marks—or illustrations in three cases—were copied in plaster, with modifications, by René Chambellan. The actual bosses were then carved from the models by the Indiana Limestone Company and shipped to the site.

Printers’ marks were really trade marks, a means of protection against literary piracy. Appearing first as a colophon at the end of each volume, a mark gradually increased in intricacy and importance until it was advanced to the front of the book. The marks were often highly personalized and symbolic of the many virtues which a craftsman was fond of assigning to himself. Making a pun on his own name was also a favorite device. In the group above, the urn in Geoffrey Tory’s mark is pierced through with a drill called, in French, a tourer. Etienne Dolet’s mark shows a hand grasping an axe, or planing tool; the verb “to plane” in French is dorer.

Of particular interest to the staff of the Robert B. O’Connor and Walter H. Kilham Jr. architectural firm was the boss based on the book ornament of Simon Vostre (lower right in the top panel). When the model was submitted by Mr. Chambellan, the central figure of the design, a seated piper, proved to be Mr. Kilham, an excellent statuette in his non-professional life.
Elevator Marks

Appearing as bronze ornamentations on the elevator doors of the Firestone Library are a pair of handsome printers' marks, one familiar to many, the other quite obscure. At the top is the mark of the famous Venetian printer, Aldus Manutius (1450-1515), chosen from the book that many consider his masterpiece, Colonna's "Hypnerotomachia Poliphili." The device of the reposed anchor and the twisted dolphin is often coupled with the motto scinting lente, a motto which one faculty wit considers particularly apt for a symbol placed on an elevator door.

Below it is a second mark, a device employed by an obscure Elizabethan printer, Thomas East (1562-1609). It was chosen because of its harmonious design; because the rake, fork and scythe symbolize peaceful pursuits; and because the motto from Ovid's "Heroides" ("But all my harvest is still ingress") is a significant reminder that there is no end to the pursuit of learning.

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PRINCETON ALUMNI WEEKLY * 47 *
A Librarian Looks at the Firestone Library

The new Firestone Library brings university library planning and building up to new levels. It greatly rewards the long co-operative study given it by the faculty and library staff and by the librarians of several other universities. To one librarian privileged to use it in the routine way for several weeks, it stands the test of use.

In Princeton everything moves along Nassau Street. From this main stem the library looms up as the most conspicuous building in the community, because of its size and setting and the uninterrupted view of it by all who live or study here, by the truck drivers, the passengers on the New York-Washington buses, and thousands of motorists. It is a priceless asset to the University in unforeseen ways.

Joseph L. Wheeler, retired librarian of the Enoch Pratt Library at Baltimore, presents in this account his impressions of the Firestone Library. A librarian since 1902, when he served as an assistant at the Providence Public Library while an undergraduate at Brown University, Mr. Wheeler has been surveyor and consultant for thirty libraries throughout the country. He is the author of "Problems and Progress in Education for Librarianship."

The goodwill value of its site has not been lost in its exterior design. The proportions and contrasts between the masses of the building, and the lights and shadows, best in the afternoon sun, make a picture whose beauty is not lost on the passer-by. When William Lescaze criticized this design in the New York Times as reverting to hampering tradition, there seemed some point to his arguments, to one who had not seen the completed building. Actually it fits into the campus among its neighbors in a most comfortable and satisfying way. For its unusual expanse of window area it uses thin horizontal instead of

PREPARATIONS DEPARTMENT: Located in an ell-shaped area on the north side of the Firestone Library is the Preparations Department. Here, moving along systematically east to west from one section to another, incoming books and periodicals are handled in a smooth operation from the time of arrival until they take their assigned place on the stacks. Shown above are many of the steps in that processing operation: (starting with upper left top and center panels) a shipment arriving by truck at the protected dock; Miss Helen Oliphant checking it against purchase orders; Miss Helga Vokel and Miss Delilah Von Blaricum cataloguing the arrivals; Miss Mary Del Vecchio stencilling the label; Miss Mary McCollum using the half-octagon cabinet containing the whole Library of Congress printed card set in book form; and Miss Greta Nilsson and Miss Louise Sullivan book-plating and embossing. In the center picture on the bottom row, Miss Claire Martwick records the arrival of periodicals. On the bottom left and right are the Library's Public Catalogue and a typical bookshelf area on one of the three lower levels, each able to shelve 500,000 books.
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thick vertical window divisions, recognizing the great value of daylight, and giving this immense stone building a certain straightforwardness that a library should have.

It is hard to imagine how any design of the current streamlined type could be developed which would not look bizarre and incongruous in this particular setting. Under other conditions, especially for public libraries, the writer looks for a drastic break with traditional library design, including the use of open face sidewalk-level façades. The problems and functions of such buildings, however, are entirely different from those of the Princeton library.

The ingenious use of the sloping site and the regrading between the building and Nassau Street, so that the long shoulder of the lawn screens the full-windowed lower (3rd) stack level, is worth study. It was one factor in gaining better use of “basement” space than in any other library. Firestone’s efficiency is due partly to the large total expanse of combined highly usable book-and-reader space on these three levels below the main floor, supplementing the smaller second and third floors, all in quick proximity by two sets of well placed automatic elevators, plus stairs, lifts and tubes. Movement of readers and staff within this “self-service” building fulfills the hope of its planners, it would appear.

Others have written up the “modular” idea, i.e., future flexibility of use and ease of moving equipment, within the 18 x 24 foot space units adopted here as a standard. It is likely that as to the various aspects of this device Princeton’s example will be prolific in suggestions for other buildings, though it has been used with certain variations elsewhere.

The Firestone Library expresses two chief aims: (a) to give the whole college personnel free access to practically

STUDENT STUDY AREAS: One of the prerequisites laid down by the planners of the Firestone Library was that it offer comfortable spaces for the student to sit down to study or read. The group of pictures above provides an indication of how thoroughly that condition was met. On the left is the student-dominated Social Science Lounge on A level, with the movable partitions open to show the Institute for Advanced Study room beyond. The Edith Haggin DeLong Memorial Room (upper right) on the main floor is assigned to the Department of Aeronautical Engineering for seminars and study area. On the left wall is a portrait of Richard L. Perry, grandson of Mrs. DeLong, who met his death in a plane crash in 1929. In the lower left picture is one of the ten "oases," or browsing alcoves, scattered through the stack area. The alcoves are designed to permit the student to find a well-lighted, comfortable seat and work space within a short distance of the shelf from which he selected his book. The reading room on A level shown in the lower right is adjacent to the Pliny Fisk, Benjamin Strong and Public Administration Collections.
CABINETS by LIBRARY BUREAU of REMINGTON RAND

Library Bureau of Remington Rand congratulates Princeton University on its new Harvey S. Firestone Memorial Library—certainly one of the country’s best designed and equipped libraries.

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all the materials; (b) to bring faculty, graduate and undergraduate students into closer contact with each other centered on their common use and discussion of books in their respective fields. These sound, vital purposes appear to be met in a high degree. And they are not easy to achieve.

Aside from such problems as laying out a library part of whose collections, including art, psychology and public affairs, are scattered in ten other campus buildings, it was a puzzle that few other libraries have tackled to bring together in correct proximities stack book-storage, graduate study rooms, seminar rooms, faculty departmental and individual offices and single carrels, for each of the major subject fields. It has been worked out exceedingly well. The carrels, 494 in number, leave little to be desired and are all assigned and are being used; the seminar rooms and offices are busy too.

In planning public libraries, and for the typical college library up to now, the convenience of the reader is given so much weight, and space on the main floor is so far more usable and convenient than on any other floor, that almost any price is worth paying to keep the adult book services on this main floor and to keep "the circle of knowledge," i.e., the most used books on all subjects in unbroken logical order. For otherwise there would be perennial confusion as to where the subject, or a particular book presumably on that subject, may actually be in the building.

Confession being salutary, the writer had been concerned over the handling of this problem in the Firestone Library, where so much main floor space has been given over to exhibit rooms and to the administrative and preparatory departments, which in most college and practically all public libraries of any size are relegated to less valuable

The Clock

PATTERNED after five common watermarks of the Renaissance, four sculptures on the cardinal points and a fifth on the hour hand of the clock in the main hall of the Firestone Library invite the attention of the scholar and casual visitor alike.

The names of most of the early papermakers who first used the watermarks depicted remain unknown; but the same device, with trifling variations, were used simultaneously by hundreds of different paper mills all over Europe. Each figure has a symbolic significance, interpreted in a study made by Harold Bayley.

The hand, at twelve o'clock, is the emblem of the axiom, "labacare est orare— its work is to pray." When marked with a heart, it takes on added significance as "loving labor." The unicorn, at three o'clock, symbolises purity and strength. It was often represented during the Middle Ages in company with a virgin holding a dove. At six o'clock is the "Might and Morning Star."

Stationed at nine o'clock is the horse representing the pursuit of knowledge. The greyhound, a breed of dog that figures most prominently in watermarks, is normally distinguished by the little bell around its neck signifying "keep barking." By stretching the ontology, the bell-baying becomes another symbol: an emblem of persistent and energetic education destined eventually to destroy the monster Ignorance.

The head of an ox that tips the hour hand appealed particularly to papermakers, since it was a badge of patience, a type "of all those who bore the yoke and labored in silence for the good of others."

The clock was designed by the architects with the aid of Austin Purves Jr, mural painter and sculptor, and was executed by Mr. Purves at his studio in Litchfield, Conn.

THE PRINCETON UNIVERSITY LIBRARY CHRONICLE, now in its tenth year of publication, was established in 1939 by the Friends of the Princeton Library. Its objectives are twofold: to record the acquisition by the Library of noteworthy books, manuscripts and other material; to survey the Library's special collections, as well as to describe in detail unusually important items in the possession of the Library; and, finally, to publish articles of general bibliographical, literary and historical interest.

The Chronicle's list of contributors is a distinguished one. It has published articles by such eminent scholars as— to name only a few among many—Gilbert Chinard, Frank Jewett Mather Jr, Willard Thorp, Maurice Coindran, Julian P. Boyd, Philip K. Hitti, Charles G. Osgood, Thomas Porter Parrott '88, Carlos Baker and Lewis H. Wright; by such well-known collectors as M. L. Parrish '88, Edward F. Hering Jr. '24, Sinclair Hamilton '96, Michael Sadleir, Robert H. Taylor '30, A. E. Gallatin, J. Hartin O'Connell '34 and Thomas W. Stoehr; by such respected booksmen as John T. Winterich, Edward Adler, John Carter and David A. Randall; and by such outstanding literary and critical figures as Joseph Hergesheimer, Allen Tate, Edmond Wilson '16, James Boyd '18, Strebers Burt '34, Booth Tarkington '33, Herbert Gorman, R. P. Blackmur and Mark Schorer.

The first editor of the Chronicle was Lawrence Thompson, now an associate professor in the Department of English. The present editors are Miss Julia D. Hudson, curator of Rare Books, and Alexander D. Wainwright '39, curator of the Morris L. Parrish Collection.

The Chronicle, which is published four times during the academic year, is received by all members of the Friends; the subscription to non-members is three dollars a year. The Friends are anxious to increase the number of subscribers to a publication which they sincerely believe is of interest not only to Princetonians as such but also to all those concerned with bibliographical, historical and literary subjects. They believe further that the Chronicle, as the unofficial organ of the Princeton University Library, warrants a greater support than it has hitherto received. Correspondence concerning subscriptions should be addressed to Lawrence Hirt, Princeton University Library, Princeton, N.J.
areas up or down stairs. Exhibits are often seen by many more persons and more effectively when recessed or otherwise placed along the routes usually taken by readers.

The Princeton solution has two aspects. First was the certainty that in this new functional plan, where part of the whole scheme is to bring faculty and students into discussion over their subject books, it would be impossible to place more than one or two such book-student-faculty-discussion groups on the main floor at best; all the rest must perform go up or down. In this library the subjects and special collections are placed according to extent of use, on the five stack levels.

Second was to utilize, as a few large city libraries are now planning to do, the most accessible space on the level just below the main floor, for the largest and busiest subject departments. In the Firestone Library this was not so difficult, for, unlike the heterogeneous crowd of old and young readers in a large public library, the clientele here is capable of using the centrally located automatic elevators and stairs without supervisory problems; so the most used subject groups of books-and-readers are only 8 feet below the main floor on level A. Careful observation, and questioning of more than a score of students,

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Lawrence Heyl, associate librarian, chief of the Preparations Department, and acting librarian from 1938 to 1940.

Malcolm O. Young, reference librarian since 1924, and in addition, since 1945, chief of the Circulation Department.

Howard C. Rice Jr., appointed in 1948 as chief of the Department of Rare Books and Special Collections.

THE STAFF LOUNGE: Opposite ends of the comfortable and utilitarian lounge provided for the library staff on B level of the Firestone Library. Included among the facilities is a kitchen and service counter visible on the right.
FIRESTONE LIBRARY EXPERT: G. Viont Duffield, chief of the Department of Building and Technical Services and, in point of service, the oldest member of the staff, came to work in the University Library at the age of 15. Assigned to the Shelving and Photographic Departments until 1920, he took over as chief of the Circulation Department in that year and served in that post for a quarter of a century. In the fall of 1944 he was relieved of all other duties and was named technical assistant to the librarian concerned with the plans of the Firestone Library. Familiar with every detail of the new building, Mr. Duffield is given credit by his colleagues and by the architectural staff for many of the features which enhance the efficient operation of the Firestone Library.

indicate that not much difficulty is experienced in finding out where materials are and going directly to the shelves.

The attractiveness of the whole interior is most evident on the main floor. Daylighting is generous, with almost continuous glass along the high “bay window” stretches of the reference room, which add so much interesting variety to the exterior as seen from Nassau Street. Electric lighting problems have been influenced chiefly by ceiling heights, the most conspicuous device being suspended filament lamps above concentric buffe-ring fixtures, and reflected from coffers deeply recessed in the ceilings of the main hall and reference room. Fluorescent lamps are not used for stacks, reading rooms, etc., though some are placed in exhibition cases. The high cost for current used is probably due chiefly to the great extent to which reading space is being used by faculty and students, and the adequate distribution of outlets and ceiling reflection; the result is an unusually well-lighted building, which means so much to every reader.

Numerous refreshing details of design and structure deserve mention and will be copied elsewhere. Another city now enlarging its central public library has already copied the attractive reading balcony suspended by rods from the ceiling beams in the Reserve Reading Room, leaving the floor below it entirely clear of posts. The streamlined, frankly unadorned stair, and landing to reach it, is a direct encouragement to other architects to design new library buildings more simply.

The same is true of the great glass screen, with horizontal divisions, separating the busy central hall from the large reference room. Every visitor to the central hall can look directly into the reading room, an interesting and inspiring sight in any library, but nowhere else so well handled so far as I know. True, the wood floors in central hall and reference room raise questions as to durability, and moving a chair makes a noise in an otherwise quiet reference room.

Space does not permit further detail, but to the writer the Princeton library is full of carefully thought-out features that will continue to attract many librarians to study it in person.

It is safe to say that the new library will have a profound influence in every aspect of university life. With the enthusiasm engendered by its opening, Princeton's library has new opportunities to pioneer in developing library use on the campus, and new bright prospects for making books more powerful agents of true education.

ADMINISTRATIVE OFFICES: At the northeast corner of the main level of the Firestone Library are the administrative offices, handsomely furnished in accordance with a modernistic decorating plan. On the left is the librarian's office, with its desk given by General Leonard Wood to General Hugh L. Scott, who later presented it to the University. On the right is the secretarial space serving both the librarian and associate librarians. A conference room adjoins.
LIBRARY TREASURES: On the southeast side of the main and second floors of the Firestone Library are the group of rooms pictured above and others which house the extensive rare books and manuscript collections of Princeton University. Notable among them are the Robert Garrett '97, Grenville Kane, Cyrus McCormick, Junius S. Morgan '88, Morris L. Parrish '88, Philip A. Rollins '26, and John H. Scheide '56 Collections. Entering the Special Collections Area from the Entrance Hall, a visitor finds, on his right, the College of New Jersey Library (see page 44) and, in front of him, the Princetoniana Room, which houses the varied collection of prints, photographs and museum objects reflecting the history of Princeton from its earliest days. Leading off to the left is the Exhibition Gallery (top center) where one of a series of interesting exhibits is always on view. Lining the right side (top right) are bookcases in which several notable collections are permanently shelved.

Entering the Rare Books and Manuscripts Area at the far end of the gallery, a visitor finds a group of five handsome rooms. Directly ahead is the administrative office (middle left) of the Department of Special Collections, with a reading room leading off on one side and the Jim Bridger Room, named for the famous Western scout and housing the Rollins Collection, on the other. To the right is the Parrish Collection of Victorian novelists (middle center and right), a reproduction of the library at "Dormy House," the home of the late Morris L. Parrish '88 of Pine Valley, N.J. Above the fireplace mantel is a portrait of Lewis Carroll's "Alice," painted by Mr. Parrish's niece, Mrs. Hugh R. Parrish. The Manuscript Room appears in closer detail in the lower left picture and the Rare Book Reading Room in the lower right. Other rooms on the second floor of the area house the Woodrow Wilson Collection and others devoted to theatrical memorabilia, stamps, New Jersey history and the graphic arts.
TO HER MANY LOYAL SONS AND MANY GENEROUS FRIENDS WHOSE GIFTS HAVE MADE IT POSSIBLE TO BUILD AND EQUIP THIS LIBRARY FOR THE ADVANCEMENT OF LEARNING PRINCETON UNIVERSITY HERE RECORDS HER DEEP AND ENDURING GRATITUDE