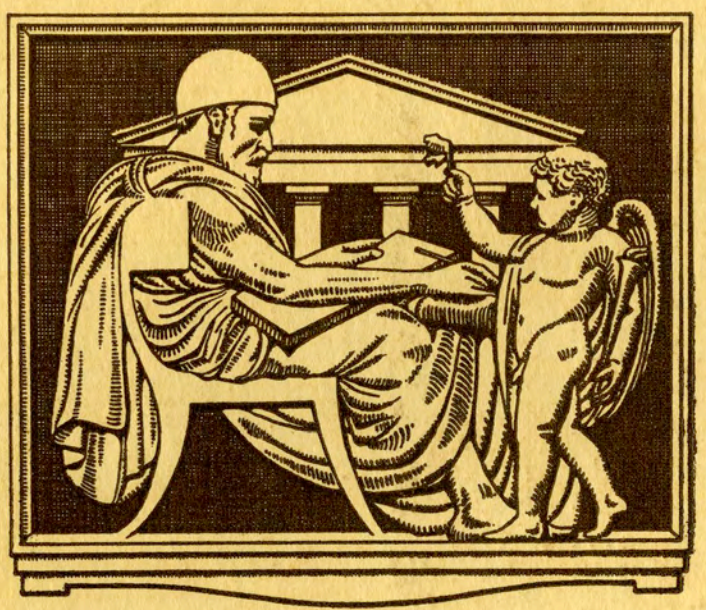
THE JOURNAL
ROYAL ARCHITECTURAL INSTITUTE OF CANADA



SEPTEMBER
1929

VOL VI • No. 9

TORONTO • CANADA

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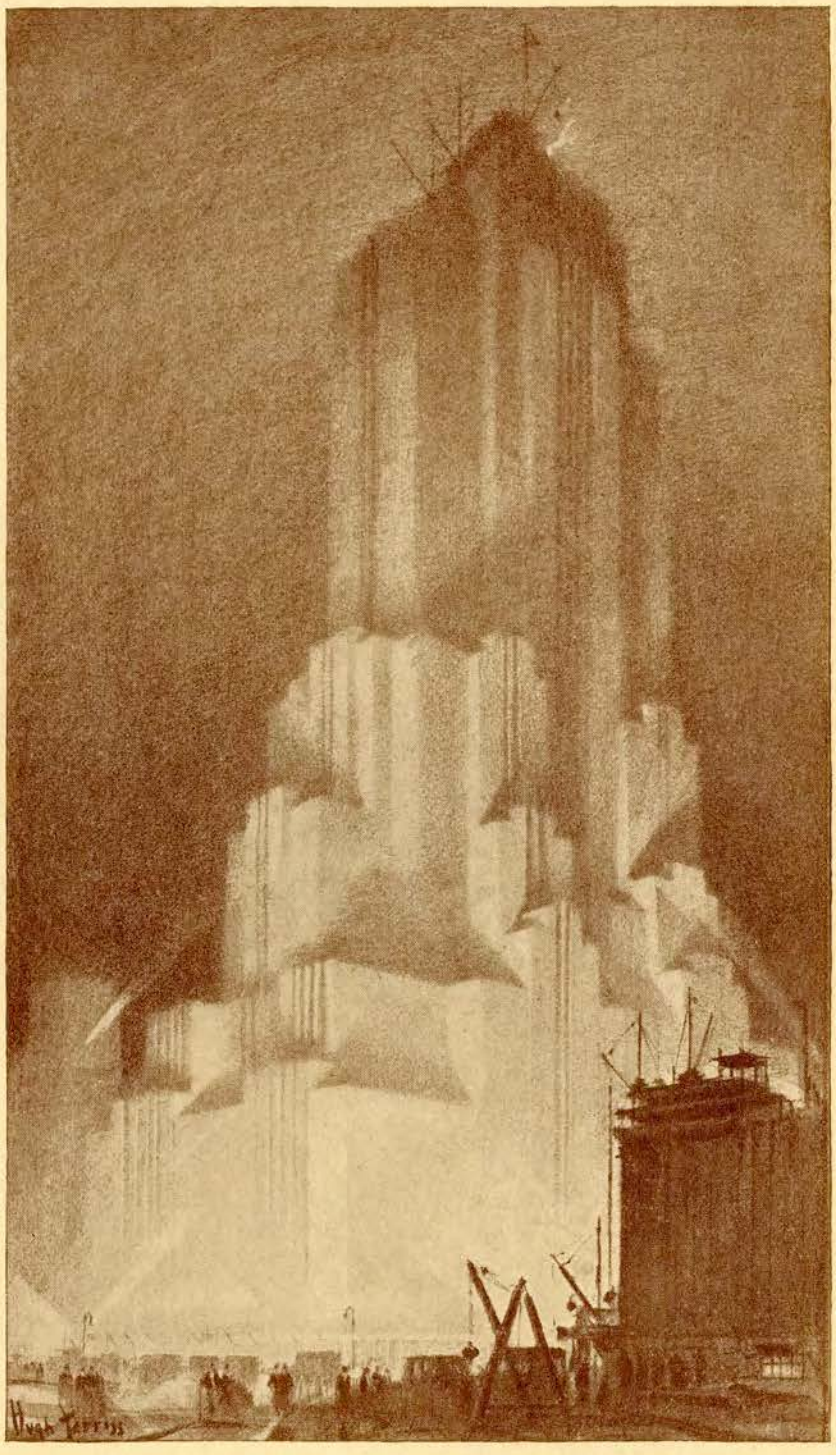

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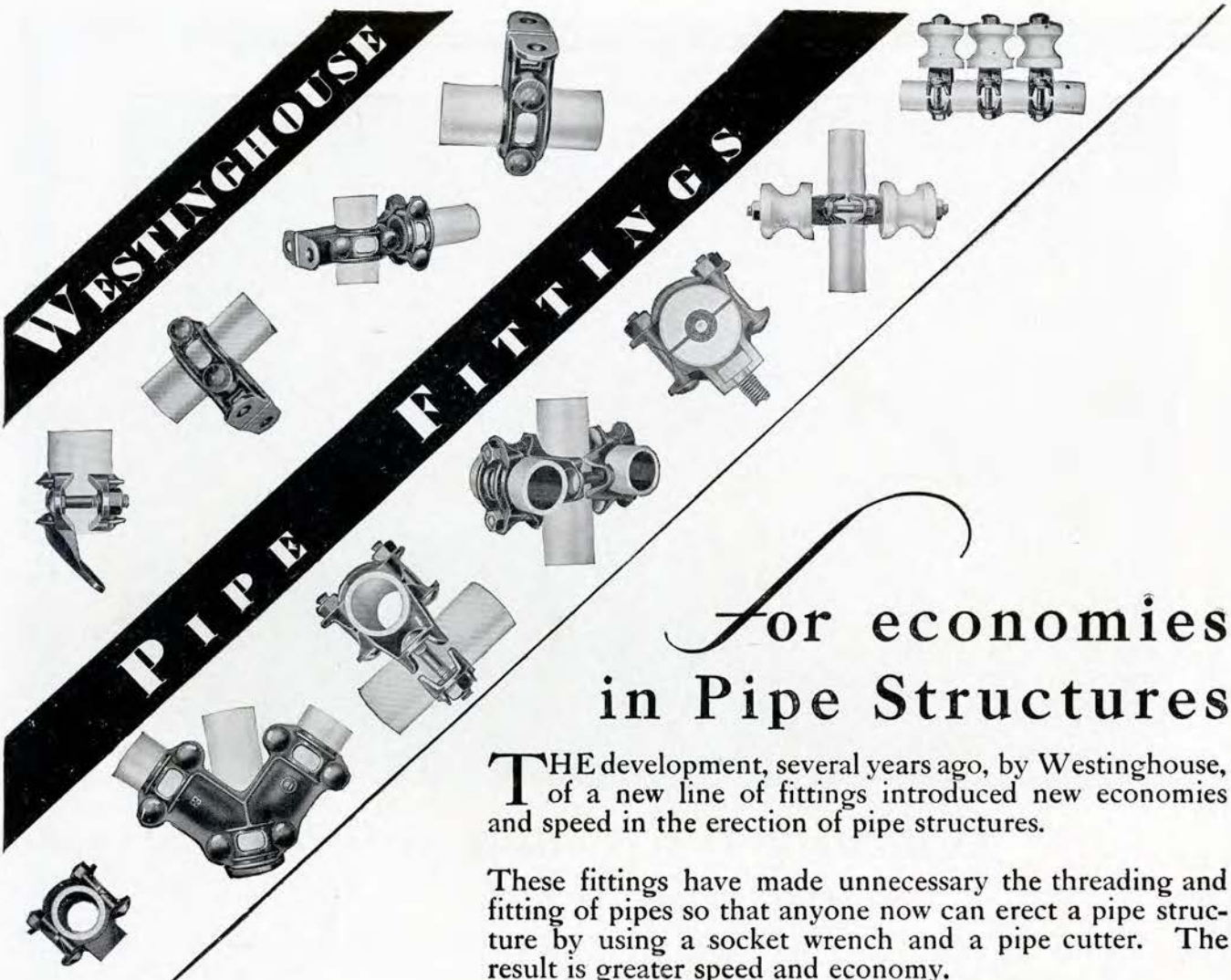

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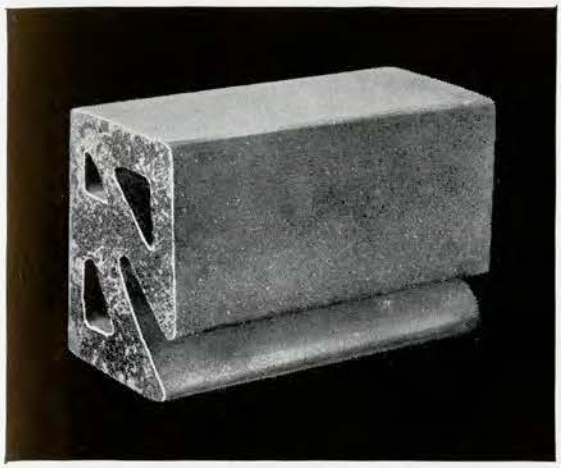

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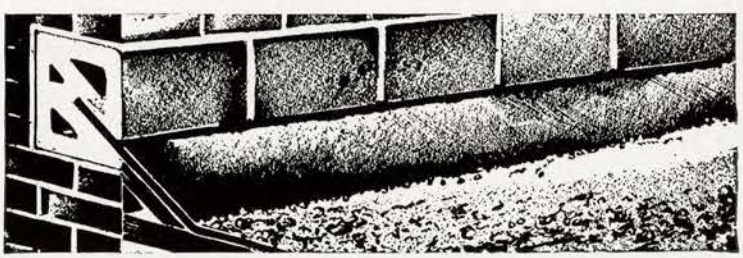

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CONTENTS

PLATE ILLUSTRATIONS

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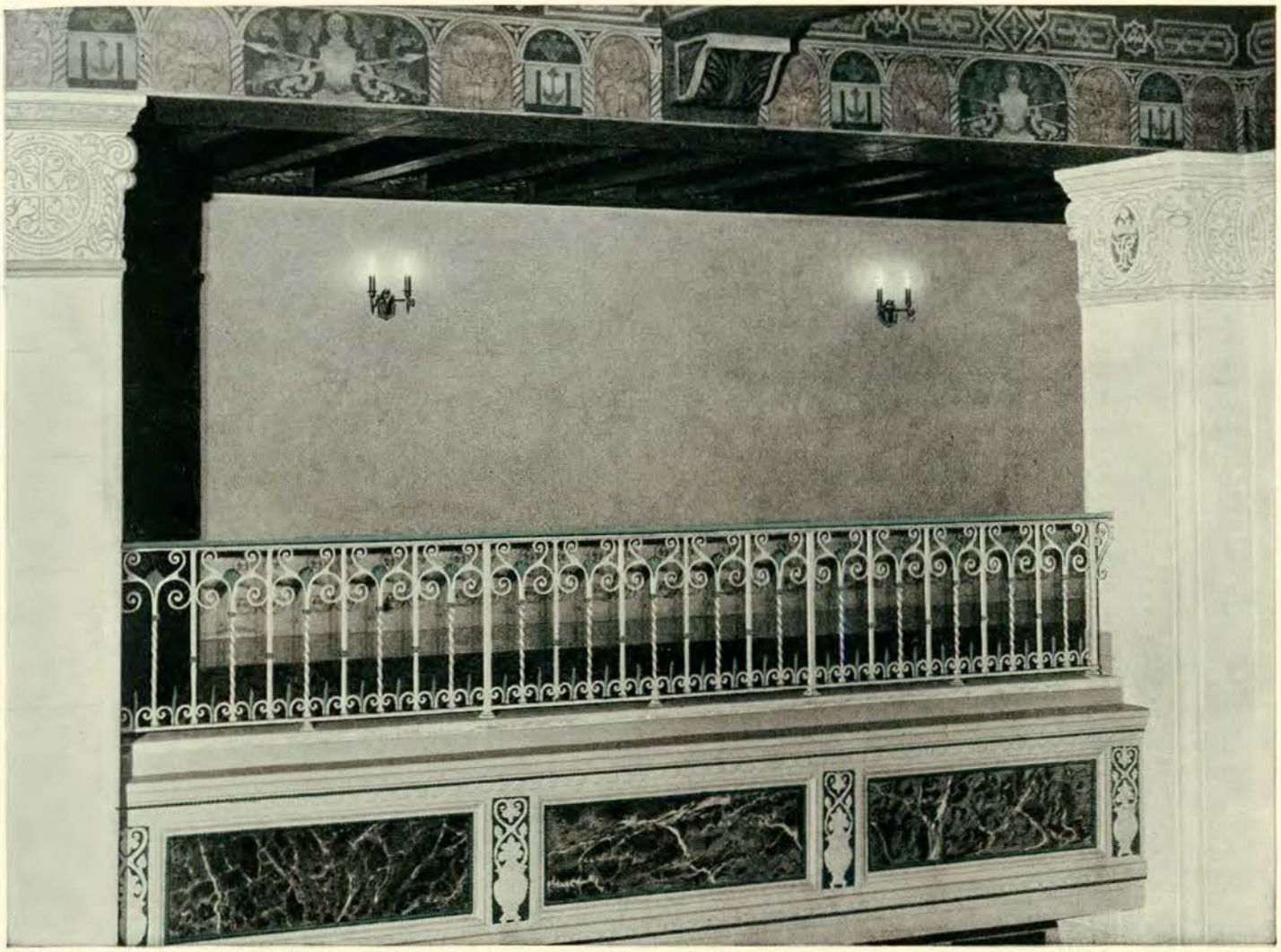

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METAL WORK IS ESSENTIAL TO MODERN ARCHITECTURE

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By WENDELL P. LAWSON

THE JOURNAL

ROYAL ARCHITECTURAL INSTITUTE OF CANADA

Serial No. 49 TORONTO, SEPTEMBER, 1929 Vol. VI. No. 9

EDITORIAL

The Editorial Board and staff of the Journal do not take the responsibility for any opinions expressed in signed articles.

THE frontispiece in this issue is from a lithograph of Durham Cathedral, by Wendell P. Lawson, B.Arch., Toronto. The original of this sketch was shown at the Forty-Sixth Spring Exhibition of the Montreal Art Association, which was held in the Montreal Art Gallery a few months ago.

THE FEATURE ARTICLE

Mr. Turner's article on public libraries, which appears in this issue, completes a series of three articles on "Libraries—Their Planning and Equipment," the first and second of which appeared in the May and July issues of THE JOURNAL, respectively. The study given to this subject by the author assures our readers of an authentic and valuable reference work. We hope that Mr. Turner's efforts in this connection will be appreciated, and that the information which he has compiled will prove of much benefit to members of the profession in the planning and designing of libraries.

A REQUEST FROM THE R.I.B.A.

Mr. Boies Penrose, an American citizen now living in London, England, has contributed the sum of $5,000.00 to the funds of the Society for the Preservation of Rural England, and has further intimated that he will increase his gift to $50,000.00 if a similar amount is contributed from other sources.

The Royal Institute of British Architects, who have taken a large part in the organization of this society, are most anxious that people who sympathize with its objects should send in subscriptions, in order that full advantage may be taken of Mr. Penrose's generous offer. To this end they have requested the R.A.I.C. to appeal to its members for funds to carry on the work of this society. Many of our architects who have had the privilege of travelling through England in recent years, must have realized that much of the beauty of the English countryside is endangered by the destruction of fine or historic old buildings, the erection of unsightly signs and incongruous buildings. As architects we are naturally interested in the preservation of the beauty of the English countryside and, if funds will encourage the worthy objects of this society then we should not hesitate in giving material assistance.

ARCHITECTURE AS A SCHOOL SUBJECT

Is general ignorance about literature so much more regrettable than general ignorance about painting, sculpture, or architecture? In these days of widespread building, the elements of architecture and the history of its development constitute a subject with a very strong claim to be taught. Just as in the sixteenth century every gentleman could write a sonnet, so in the eighteenth century every gentleman knew the five orders and could criticize a building: the result was excellent. In the Victorian age there was little or no public conscience in the matter, and the result was, on the whole, deplorable. What is to be said of our own age by future generations?

Every architect will admit that there is a general lack of appreciation in this country of the importance of the arts in the lives of our communities. Among the arts, that of architecture is perhaps the most important, as it has a direct influence upon our daily lives. This lack of appreciation is undoubtedly due to the fact that the teaching of the arts has been overlooked in the planning of the educational system of this country.

Architecture is a good school subject for a number of reasons: First—It offers opportunities for drawing, and a very large number of boys enjoy drawing; moreover, one tends to remember a thing when one has drawn a picture of it. Second—It helps the teaching of history, simplifying the almost overwhelming task of getting a boy to "see the centuries" as different entities; and, no less than the study of dead languages, it connects the modern world with the ancient. Third—It is not entirely an abstract subject; the practical advantage of the pointed arch in ecclesiastical architecture, or the solution of simple household problems in domestic architecture, bring what the book reviewers call "a welcome touch of reality into the class-room." Fourth—The present age is an age of architectural transformation and, generally speaking, an age of architectural activity, and this should help to arouse interest in the subject.

Mr. Walter Tapper, in his presidential address to the Royal Institute of British Architects, emphasized the need of introducing the art of design into the curricula of the schools and colleges. An education, he claimed, which knows nothing of beauty and is blind to the arts, is not an education

at all. The country is suffering from an invasion of ugliness and vulgarity, and will continue to do so until something is done to remedy the cause. To deal effectively with the cause, the R.I.B.A. appointed a special committee to consider and report upon the methods of interesting boys and girls in the schools on architecture and kindred subjects. The following recommendations were made by this committee:

(1) To prepare a list of books on architecture suitable for inclusion in school libraries.

(2) To found an annual prize for an essay, or for sketches, or for other evidence of interest in the subject, to be open to pupils in public and secondary schools.

(3) To urge the headmasters of all public and secondary schools to encourage and develop interest in architecture by means of existing school societies, and by the establishment of school architecture societies.

(4) To draw up a list of lecturers who are willing to deliver lectures in public and secondary schools in all parts of the country.

(5) To draw the attention of all headmasters to the existence of these lectures, and to assist them in arranging lectures.

(6) To approach the public and secondary schools by means of circulars urging the importance of interesting all their pupils in architecture as an essential element in any minimum liberal education, and outlining the method by which their object may be obtained.

We feel confident that if something along these lines were followed by our own Institute, the results would be far-reaching, and would eventually bring about a more favourable attitude on the part of the general public for art and architecture.

The International Hospital Congress and Annual Convention of the American Hospital Association

By B. Evan Parry

Supervising Architect,
Department of Pensions and National Health, Canada

ATLANTIC CITY was truly the mecca of the hospital world during the early part of June. Forty-four countries were represented, including South, Central and North America. Egypt viewed this meeting as being of such importance that four delegates attended, representing medicine, administration, architecture and construction. This action doubtless was prompted by the fact that the Egyptian Government is planning a large medical school in Cairo, including a 1,300-bed hospital with an out-patient department having a capacity for 3,000 patients per day.

Canadian speakers on the programme were Dr. J. J. Heagerty, chief executive assistant, Department of Pensions and National Health, Canada; Dr. George F. Stephens, of Winnipeg, Manitoba; Dr. A. K. Haywood, of Montreal, Quebec; Dr. Harvey Agnew, Canadian Medical Association, Toronto; and the writer. Language did not prove a handicap, inasmuch as addresses delivered in English, French or German were concisely translated by Dr. Rene Sand of Paris, President of the Congress.

The architectural profession may be interested to learn that architects in practice and government architects all contributed to the discussions initiated by the medical men and hospital administrators, with the result that personal contacts formed were invaluable, and can not be otherwise than beneficial to the profession at large.

Dr. S. S. Goldwater, hospital consultant, New York City, gave a paper under the caption of "Economic and Administrative Aspects of Hospital Planning," stressing the importance of hospitals generally in the social budget, as also the fact that approximately one million dollars per day is being poured into hospital construction in the U.S.A. (It will be recalled by those who attended the last annual meeting of the Royal Architectural Institute of Canada, held in Toronto, that a similar note was struck by Professor Percy E. Nobbs.) He called attention to the fact that there is need of a theory of the economics of hospital planning, and that basic principles are not commonly understood or that they are not uniformly applied. Dr. Goldwater said that to trace the far-reaching effects of hospital activities is to perceive that hospital planning has many implications that it is a complicated art; that it involves grave social responsibilities and that proper evaluation of the usefulness of a hospital building can not be made without much study.

The actual cost of a hospital building is of great practical importance to the building committee, but in a theoretical approach to hospital planning, the mere cost of construction can not be accepted as the ruling factor. The size or mass of a correctly planned hospital building and the character of its equipment, which basically determine cost, are not deduced from available funds, but from functional needs. A logically conceived hospital plan is not one in which a given space or mass is arbitrarily assumed and then subdivided to the best of the architect's ability, but one in which the requirements of the various hospital functions are first studied separately, the forms and space allowances thus ideally conceived for individual departments being afterward put together in the least disadvantageous combination possible.

"What are the proper proportions of the parts that go to make up the hospital as a whole?" was a question raised at the congress. How can these parts be so united—to borrow an analogy from human anatomy and physiology—as to produce as much gland or productive tissue and as little unproductive connective tissue as possible? It is in combining hospital departments into a well proportioned, smoothly functioning, and not unduly expensive whole that the hospital planner achieves success or registers failure.

In the United States today, carefully planned general hospitals range in mass from 8,000 to 16,000 cubic feet of construction (occasionally even more) for each patient's bed. Variations are caused by space-consuming professional departments which lie beyond the area which is devoted to the shelter and immediate care and treatment of bed patients. Dr. Goldwater cited the case of two neighboring general hospitals of about 600 beds each. One of these hospitals estimates its dispensary requirements at 200,000 cubic feet; the other demands a dispensary of 500,000 cubic feet. The larger of these two dispensary buildings will be used for undergraduate teaching; the smaller will not.

The growth of the out-patient department has had a marked effect upon the total cost of hospital construction during the past decade. The development has been both quantitative and qualitative. Hospitals that considered out-patient departments unnecessary twenty years ago now find them indispensable. Comparable to the expansion of the out-patient service is that of the X-ray department. Instead of departments which at one time were content to occupy 300 or 400 square feet, we find modern departments occupying from 3,000 to 10,000 square feet. Likewise the growth of laboratory work in hospitals has considerably increased. All of the clinical departments of the hospital now demand laboratory support.

There is a widespread belief in the U.S.A. for the usefulness of physiotherapy more comparable to that which obtains in Europe. On this account, prudent architects will endeavor to locate it strategically, with an eye to its future expansion. The creation of a department for the investigation of medical physics in one of the U.S.A. great medical schools is an event of significance to hospital planning. Then again, modern operating room planning is greatly in excess of that which was deemed sufficient twenty years ago.

Although the ordinary hospital is not a teaching hospital, yet the modern hospital constantly uses its clinical conference room, and with the introduction of formal and informal post-graduate medical education, other lecture and demonstration rooms are required.

Conspicuous among the forces which have added to the cost of hospital construction, is the growth of the department of nursing. Twenty years ago, the nursing department of a general hospital expected that accommodations for nurses would be provided in the ratio of one nurse for each three hospital patients. In certain parts of the country, today, the current ratio is one to two, an increase of 50 per cent; elsewhere hospitals are adopting a ratio of two to three. An advance from a ratio of one to three to a ratio of two to three implies an increase of 100 per cent in the cost of building for the nursing department; actually the increase has been much greater, for while the number of nurses has doubled, the character of nurses' homes has undergone radical changes.

The public health authorities of New York City believe that every general hospital should maintain at least a small isolation ward for the care of occasional contagious cases that can not be prevented from cropping up and that are not suitable for transfer to a central contagious hospital; the beds in these small contagious wards are often unoccupied for months at a time, yet the inclusion of this space in the building programme is doubtless justified.

Dr. Goldwater stated that it is his belief that the next decade will witness a distinct movement toward individual care in the preparation of food for hospital patients. He stated that he suggested many years ago, half seriously, that if a perfect hospital were ever built, it would be a hospital in which each patient would have a private room, an individual nurse, a private balcony, and a private garden, and, today, he thinks he might have added that a perfect hospital would provide a private cook for each patient as well, and that the best French cook obtainable would be none too good.

The multiplication of hospital personnel partly contributes to the increased cost in hospitalization, and about a dozen years ago a bold man in a middle-western city undertook to establish a large general hospital without resident nurses or other resident employees. The employees were all expected to provide their own meals. That this experiment, a revolutionary one for this type of hospital in the U.S.A., did not turn out precisely as it was expected, may be inferred from the fact that this hospital subsequently built the most sumptuous nurses' residence, with an independent kitchen and a number of attractive dining rooms.

Space allowances for laundry purposes vary considerably, 12 to 15 square feet (for laundry together with receiving, sorting, and distributing rooms) for each occupied bed may be set down as a fair average. The use of a double shift of workers has often been suggested, but rarely tried; this would materially diminish space and necessary equipment.

Emphasis was made as to the necessity for the architect to consult the purchasing department about advantages of a plan for the purchase of merchandise in bulk at reduced prices. Storage space can not be had for nothing, but such space must be paid for only once, whereas the purchase and consumption of costly supplies goes on forever.

The consensus of engineering opinion is that hot water plants, while a little more costly to install, are cheaper to operate, if properly regulated. From the standpoint of economy, the shorter the hospital corridor the better, but if corridors are reduced to the vanishing point, the hospital may pay the penalty of a loss of other desirable qualities. Stairways are not much used today in the multi-storey hospitals, and, therefore, are limited in number and size to the minimum requirements of the law. As the speed, control, and general effectiveness of elevators increase, the number of elevators required in large hospitals should diminish; if this actually happens, space will be gained, but it does not follow that money will be saved, for the cost of installing each elevator, with its superior equipment, will rise. In this connection, it is interesting to note that hospital administrators are now mak-

ing an intensive study of this phase of hospital construction and equipment.

Stress was laid on the fact that the skill of hospital architects can nowhere be applied to greater purpose than in the development of hospital plans which render mechanical ventilation almost, if not quite, superfluous. Although hygienic principles are everywhere the same, their application calls for hospital planning of one kind in cold countries, another in the tropics, for in the one case the direct rays of the sun are a blessing, in the other an evil to be guarded against. The advantages of sun exposure (in the temperate zone) of ample air space, and of free ventilation, are generally conceded, and that it is the duty of the hospital planner to conserve these and all other values which contribute to the health and welfare of hospital patients.

Motion studies will accomplish wonders for medical efficiency through improved hospital planning. The patient who must be carried to and from a distant operating room, X-ray room, or laboratory, is not often benefitted by the journey. The sterility of a surgical instrument is not enhanced by its prolonged exposure to contamination after it is taken from the sterilizer.

Briefly summarized, the greatest single contribution which the hospital planner can make to medical efficiency is to foster the development of general hospitals composed of all the clinical and laboratory departments that are logically related to each other in modern clinical practice.

Mr. Lang, state architect of Berlin, Germany, was very apt in his statement that a hospital was "not a monument but an instrument." Mr. Hermann Distel, architect, Hamburg, Germany, stated that the time was ripe for an intelligent research programme upon hospital planning, in which most of the delegates concurred.

Many of the delegates informed the writer that the type of general hospital to be seen in the U.S.A. was not comparable to their requirements, while some of those they had seen in Canada were quite satisfactory.

The writer, in speaking to Dr. Goldwater's paper, suggested that a well-regulated earthquake every twenty-five years may be a good thing, which remark, curious to relate, was echoed by a prominent surgeon from Montevideo, except that he suggested it should be every twenty years.

There was no doubt in the minds of the delegates, when agreeing with the writer's expressions, that economy in hospitalization meant reduction of time bed occupancy; health centres, not disease centres, should be the slogan of hospitals; also that the boarding house type of hospital was a financial drain upon the public purse; co-operative buying and deletion of duplication of scientific consultative and technical services should be considered, and that the care of custodial patients, such as chronic cases, in cities, was an economic waste.

The American Hospital Association's Convention opened on June 17th, 1929, in the Auditorium, Atlantic City, whereat over four thousand delegates attended and the largest educational exhibit ever assembled under the auspices of hospital and nursing professions was on display throughout the week. The exhibit of the American Institute of Architects was comprehensive, interesting by its variety, and informative, and the American Hospital Association is to be congratulated in having the co-operation of the A.I.A. in presenting such valuable data.

The writer, during the course of conversation with Mr. C. Herrick Hammond, president of the American Institute of Architects, Mr. Edward F. Stevens, of Stevens & Lee, and Mr. Charles Butler, of New York City, discussed the advisability of the Royal Architectural Institute of Canada combining with the A.I.A. for an exhibition of drawings in connection with the American Hospital Association's Conventions in the future. It may be opportune for the Institute to take this matter up with the American Institute of Architects, so that arrangements can be made for the next convention of that association, which will be held in New Orleans, 1930. The members of the A.I.A. above referred to are of opinion that during the next decade the most important venue for hospital building will be in Canada, even to a greater extent than that in the U.S.A.

Particularly interesting was the close attendance of the United States architects at the Canadian exhibit, although perhaps some of the Canadian architects who visited the convention found more interest in the American exhibit, at least, that was gathered by the fact of them not visiting the Canadian exhibit. The exhibit prepared by the Dominion Government covered representative hospitals of every province, and excited the enthusiasm and interest of the International Hospital Congress delegates, as also the prominent U.S.A. hospital consultants and hospital architects of that country.

Perhaps the most outstanding work of interest to the international delegates, as also the United States architects, was that of the University of Montreal, designed by Mr. Ernest Cormier, P.Sc.A., D.P.L.G.F., R.C.A. Requests were made by the delegates from Cairo, Germany and South Africa to be furnished with photographs, as each and every country has under consideration a similar project. Dr. Jos. Wirth, delegate from Frankfurt, Germany, was quite enthusiastic over the grouping and general composition of the design, particularly so as regards its dignity.

Another exhibit created quite a sensation, more particularly its planning and construction, the project being the hospital constructed last year at Ile a la Crosse, Northern Saskatchewan. Delegates from South Africa, Egypt, Norway, Switzerland, Poland and Australia, as also several others, desired to be furnished with photographs and details of construction. Many of these delegates thought that it was inconceivable that such construction would hold up under such rigorous conditions obtaining in the district wherein this hospital is built. Further, the compact and efficient co-ordination of the different services made a very strong appeal, as also the low cost of construction. (The writer was the architect for the above, and James Govan, consultant).

The Stevenson Memorial Hospital, Alliston, Ontario (James Govan, architect), excited great interest, more particularly so the out-patient department and clinical accommodation, and copies of these plans were requested by the delegates.

The Toronto General Hospital, private patients wing (Messrs. Darling & Pearson, architects), intrigued many of the visitors by a most ingenious arrangement in planning which has been effected

in the routing of the patients from the private rooms to other departments of the hospital.

From observation, one was led to think that the principles, practice and construction of infectious diseases hospitals have not yet been fully grasped by hospital superintendents and architects engaged upon hospital planning, especially in connection with infectious units in general hospitals.

Medical directors of sanatoria from every part of the world were interested in the standard tuberculosis unit for general hospitals designed by the writer, and copies are being sent, with description, to over two dozen applicants. Orientation, coordination and cost were the factors which were responsible for the interest.

The historical hospitals of Canada (reproductions from illustrations in "Four Centuries of Medical History in Canada," Dr. J. J. Heagerty) proved to be a great draw in the exhibit.

The exhibit of Messrs. Stevens and Lee, architects, covering the Ottawa Civic Hospital; Notre Dame Hospital, Montreal; Royal Victoria Maternity Hospital, Montreal; and Hotel Sacrament, Quebec, received much attention, although perhaps the exhibit lost in interest by the fact of not having plans of these various buildings.

The Regina hospitals, namely, Regina General and Regina Grey Nuns', as also the hospitals of Manitoba and Alberta, were much admired, both in arrangement and general conception.

The sanatoria, as represented by the Prince Albert Sanatorium, Sask.; Muskoka Sanatorium, Gravenhurst, Ontario; and the Royal Ottawa Sanatorium, were discussed in detail by prominent sanatorium superintendents and architects engaged upon such projects.

The new General Public Hospital, St. John, N.B. (Messrs. Pond & Pond, Martin & Lloyd, architects), proved an attraction. Amazement is perhaps the best way to describe the effect on many of the delegates upon such an undertaking. Mr. Irving Wright, of Messrs. Pond & Pond, Martin & Lloyd, was in close attendance, as inquiries were many, much time being taken up in explaining low cost of construction and the planning generally. Criticisms were offered as regards planning and Mr. Wright spent quite a lot of time in answering the points raised.

The exhibit of the soldiers' hospitals of Canada was studied, principally by the medical officers and architects of the U.S.A. Army Service. It was interesting to note upon inspection of the United States exhibit of similar hospitals, great emphasis and value has been placed upon occupational therapy. The U.S.A. veterans' hospitals, generally speaking, are of more solid construction than the Canadian soldiers' hospitals, which may possibly be explained by the fact that the U.S.A. planned their hospitals for occupation of a more lengthy period than those originally built in Canada. The U.S.A. hospitals are administered by the U.S. Army authorities, and one was much impressed by the ample provision of amenities and utilities in conformity with up-to-date standards.

Highland View Hospital, Amherst, N.S. (A. J. Hazelgrove, architect, the writer consultant), proved a subject of interest, especially to Nova Scotian doctors and nurses now practising in the United States, partly due to the fact that they were conversant with the old hospital before it was partially burned down in 1928. Dr. MacEachern, of the American College of Surgeons, was eulogistic in the arrangement conceived for the operating and maternity departments, as also the re-alignment of the walls of the nursing units. Both the architect and the consultant, he thought, were to be congratulated.

It is hoped that upon some future occasion the government will be inspired to get an even more representative exhibit of Canadian architects' work in the hospital field.

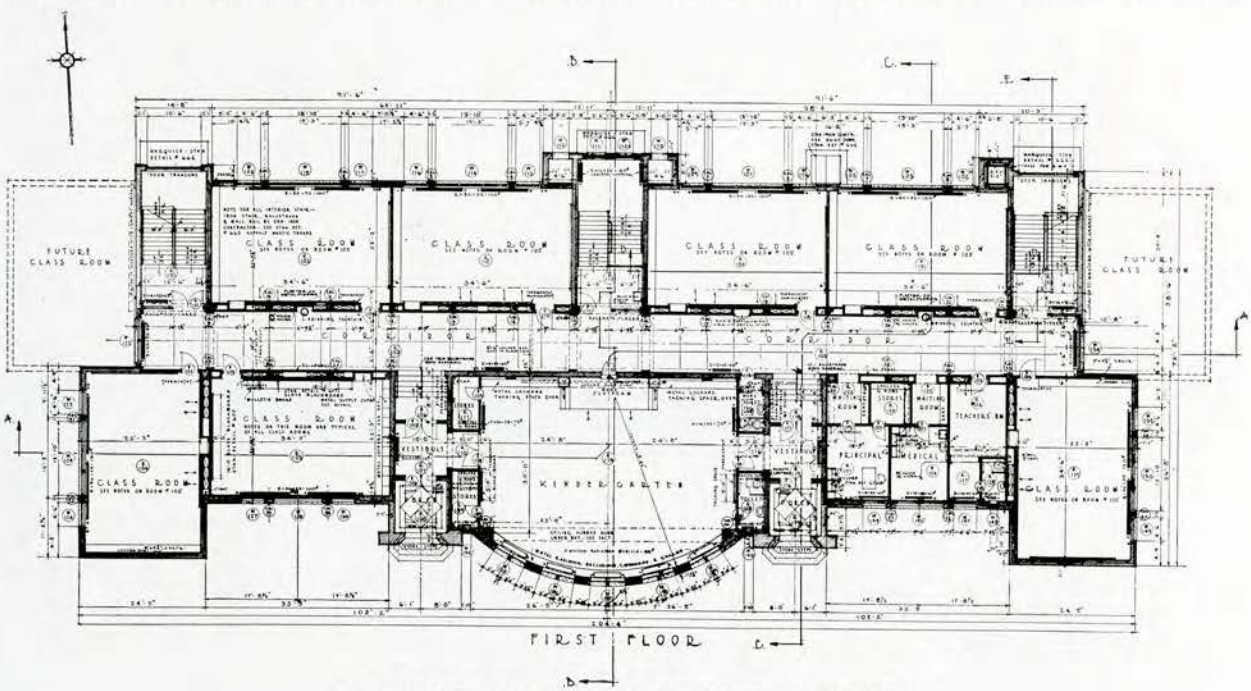
The writer, in conclusion, apologizes for the scrappy way in which these notes are given, but would take this opportunity of emphasizing the outstanding impression formed by contact with the delegates, including those from the U.S.A., namely, that it behooves Canadian architects to give some intensive study to hospital work so that they may be prepared for the large field which is opening during this next decade.

The Maurice Cody School, Toronto

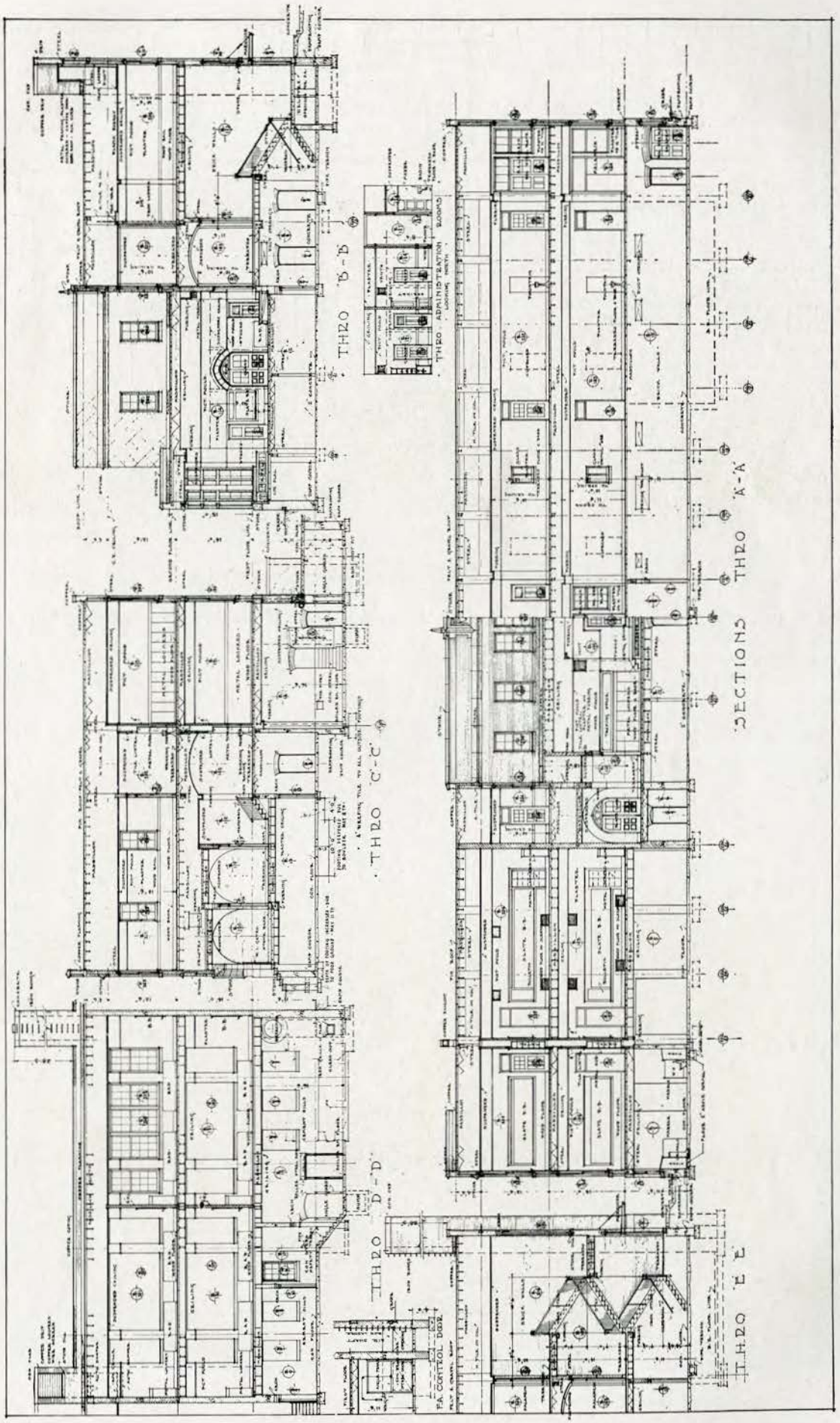
THIS school, which has been dedicated to the memory of the late Mr. Maurice Cody, son of the Rev. Canon H. J. Cody, is one of the recent schools erected by the Toronto Board of Education.

The building is located on Belsize Drive in the northern part of the city and has a length over all of 204 feet and a depth of approximately 80 feet. It consists of two storeys and a basement, and contains fifteen classrooms, a kindergarten, library and administration rooms. The kindergarten, which is one of the features of the school, has a large circular bay at the front of the building, between the two entrances. A platform has been provided in this room, so that it can also be used for auditorium purposes.

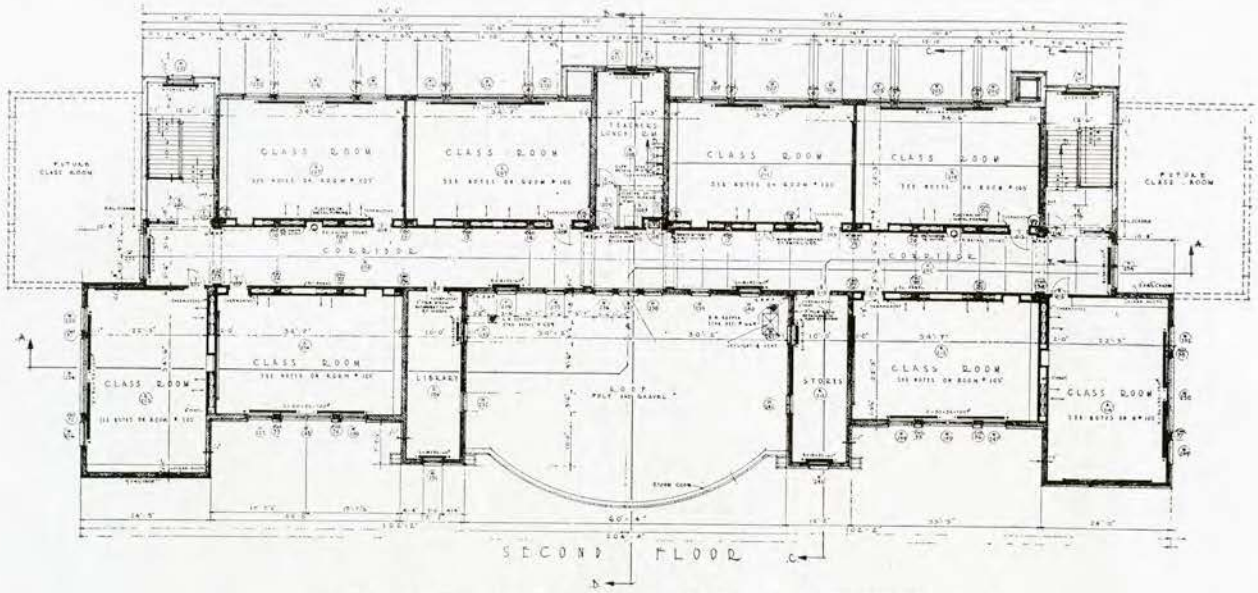
The school is of fire-proof construction with floors of bar-joists on steel. The exterior of the building is faced with red stock brick, trimmed with Indiana limestone. The floors of all the corridors are of terrazzo with terrazzo cove base, while the floors in the classrooms are of maple laid on wood sleepers. Corridors have suspended furred segmental ceilings, and the space between the ceiling and the floor construction is used for the horizontal ducts. The walls of the corridors



FIRST FLOOR PLAN—MAURICE CODY SCHOOL, TORONTO
C. E. C. Dyson, Architect for Toronto Board of Education



SECTIONS—MAURICE CODY SCHOOL, TORONTO
C. E. C. Dyson, Architect for Toronto Board of Education

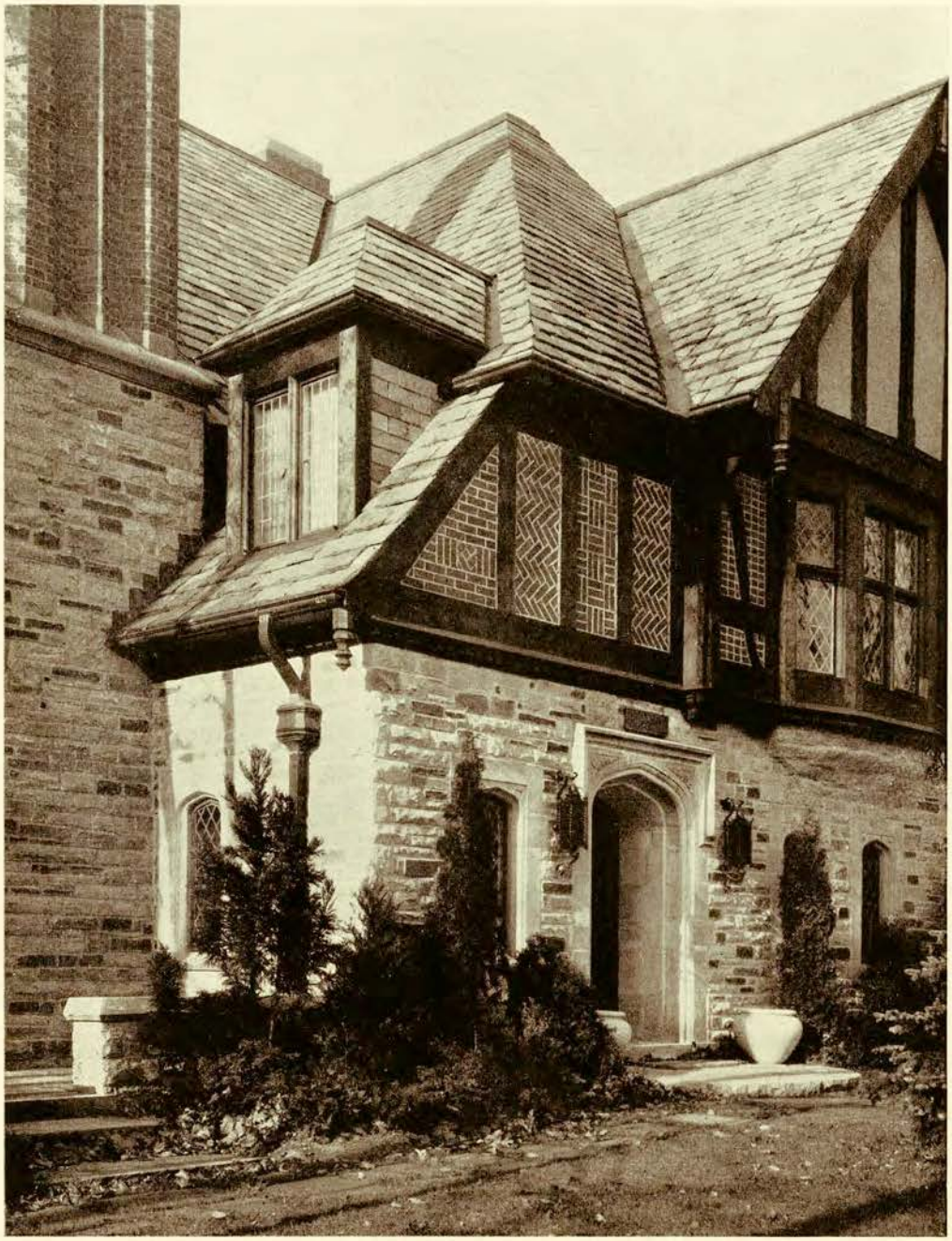


SECOND FLOOR PLAN—MAURICE CODY SCHOOL, TORONTO

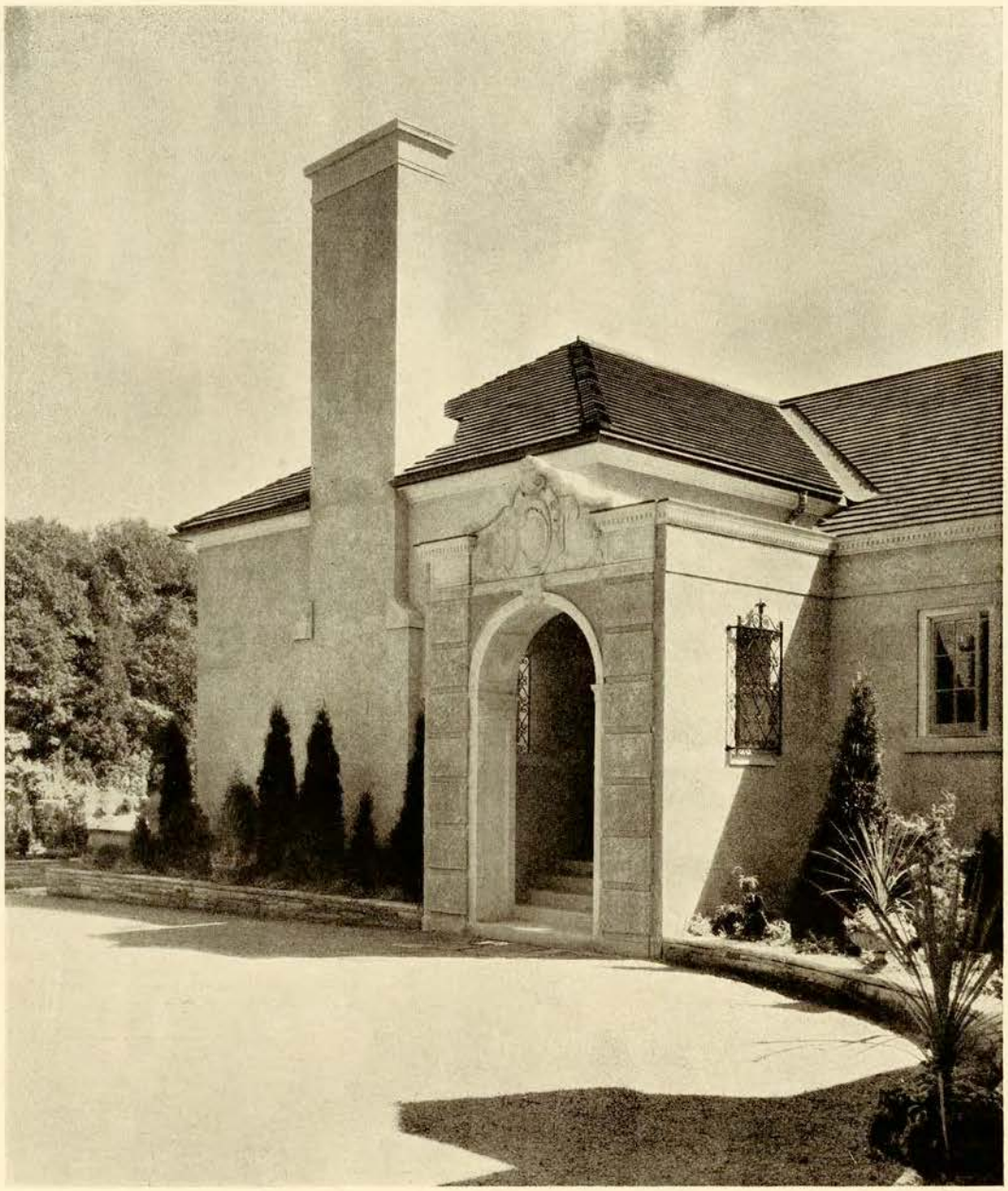
are of sand-finished plaster, while those of the stair towers are faced with grey stock brick. Classrooms are provided with metal lockers at the rear of the rooms, these lockers being ventilated and connected with the mechanical ventilation system. This system is arranged for re-circulation. Two fan units have been provided, each handling one-half of the school and sufficiently large enough to carry future extensions. The classrooms have been provided with supply cupboards of metal construction, and display cabinets for trophies and other objects have been built into the classroom walls.

The building was designed by the architectural department of the Toronto Board of Education, of which Mr. C. E. Cyril Dyson is the chief architect.

DETAIL OF MAIN FACADE—MAURICE CODY SCHOOL, TORONTO
C. E. C. Dyson, Architect for Toronto Board of Education

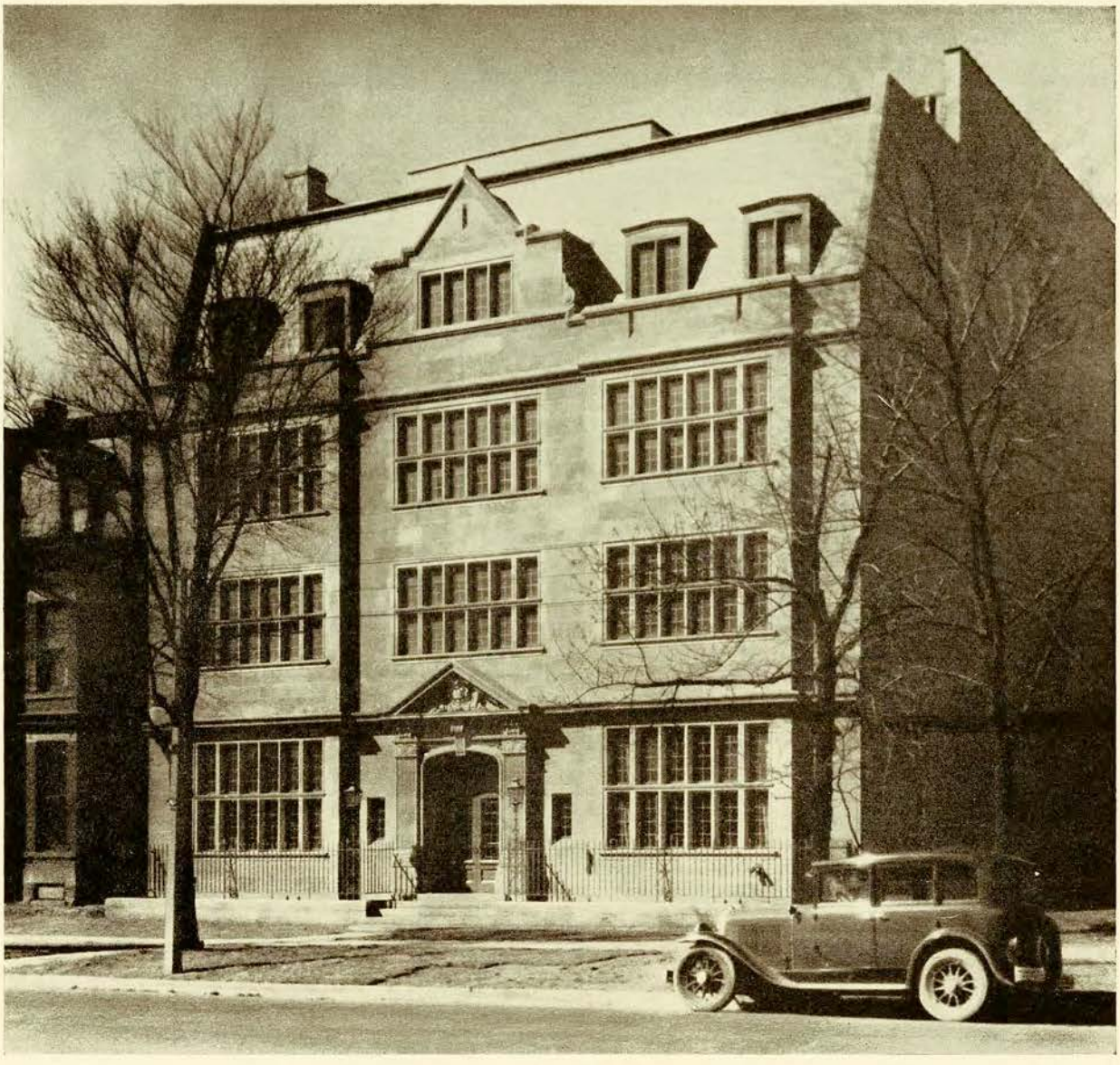


ENTRANCE DETAIL, RESIDENCE OF C. L. BURTON, ESQ., TORONTO
Douglas E. Kertland, Architect
(Shown at the 1929 Toronto Chapter Exhibition of Architecture and Allied Arts)



ENTRANCE DOORWAY, "SHADOW BROOK"
ESTATE OF HAMILTON B. WILLS, ESQ., WILLOWDALE, ONT.
Mathers & Haldenby, Architects
(Shown at the 1929 Toronto Chapter Exhibition of Architecture and Allied Arts)

EGLISE ST. AMBROISE, MONTREAL
Ernest Cormier, F.R.I.B.A., R.C.A. Architect



OXFORD UNIVERSITY PRESS, TORONTO
Sproatt & Rolph, FF.R.I.B.A. Architects

MONTREAL PUBLIC LIBRARY
Eugene Payette, Architect

Library Buildings

(Their Planning and Equipment)

By PHILIP J. TURNER, F.R.I.B.A.
(*Special Lecturer, Department of Architecture and Library School, McGill University*)

III—PUBLIC LIBRARIES

THE requirements of a large city library are varied and complex. Though the same general principles that govern the small library (see Article I) will also apply to the larger building, provision has to be made for a number of departments not found in the small building and the problem becomes complicated.

The word "library" means to the minds of many a mere storage for books, but although it is this, it is also a great deal more, and to house the many departments that are now necessary to bring about adequate contact between book and reader, is quite another thing.

Public libraries have become in these modern days community reading clubs, and it is as such that their problems should be considered.

To indicate the many divisions of work that function under the roof of a public library, not only is a library building a store for books as contained in the now general book stacks, but, in most buildings, it is an art gallery and museum in its exhibition of rare books, prints, etc.; a shop in its arrangement and display of periodicals and books on open shelves; a school or college in the provision made for study; a public hall in its lecture rooms; an office in its clerical departments; a workshop with its bindery; and a warehouse in its reception and distribution of books for the branch libraries as served from the main building.

"It is," as Mr. L. S. Jast says, "all these in its units and in its units welded together to form a related and inter-connected whole, it is a library."

Its complexity indicates how libraries have grown in size and function during the last seventy years of their existence, both in England and America.

Library buildings soon grow out of date, and that is why the older buildings are so handicapped in trying to keep up with the demands now made upon them.

The note of the public library can be said to be the democratisation of books and learning, just as the chief general requirements of such a building are space, air and light.

The public library idea was first developed in England, but owing to the lack of funds since the Great War, library planning and new buildings have not developed in such a general and grandiose way as elsewhere.

With the exception of the Mitchell Library at Glasgow (1911) and the National Library of Wales at Aberystwyth (1914), no library buildings of large scale have been erected in the British Isles during the last eighteen years.

Those that have been built give one the impression that those responsible for them have always had in mind the cutting down of expenses for lack of sufficient funds with the possible exception of the John Rylands Library at Manchester, which is a building that has great distinction in the beauty of its work.

In America, on the other hand, many municipal libraries have been built in recent years costing anything from one to five million dollars and, in some instances, even more.

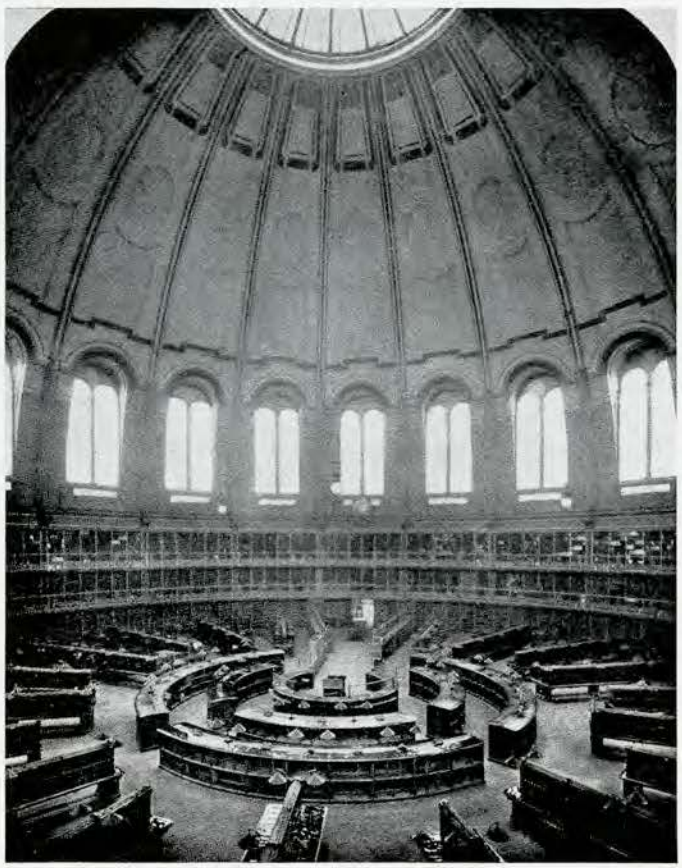
These are fitted up in the most luxurious style with every requirement, mechanical contrivance and the best of fittings provided throughout.

In showing such a splendid public spirit for the good of the community the American people are to be congratulated, for, as a general rule, wherever municipal or public library buildings have been built, the matter of expense never appears to have been seriously considered in the desire to obtain the best of everything in the finished building.

These buildings vie in splendour with the many office buildings and others that are devoted to commerce.

Though the skyscraper is the most typical building of the United States, it is more especially suited to offices and hotels, and although there are libraries in skyscrapers, they like museums and art galleries, extend in the horizontal rather than the vertical plane, and follow the European model in this respect.

Criticism has been made regarding the very elaborate and decorative character of some of these libraries. It has been pointed out that after all, these costly buildings have become rather museums of art, and that the architecture and decoration shout down the books. And, after all, a properly designed library should express its purpose clearly, and should consist primarily of books contained in a building rather than a building containing books!



READING ROOM—BRITISH MUSEUM, LONDON

Designed by Sidney Smirke from sketches by the famous librarian, Sir Anthony Panizzi; built in 1855-57. The dome of the reading room is 135 feet interior diameter. The library is from its most cosmopolitan qualities, the most interesting in the world, and has no rival in this respect. It has 2,000,000 printed volumes, 56,000 manuscripts, and over 5,000,000 items in all.

To illustrate these two points, one can appreciate why the reading room of the British Museum appeals to students and book-lovers. Although no longer modern, it has, without question, the qualities of space, proportion, and books and nothing else.

On the other hand, in the Boston Public Library, Massachussets, which is beautifully designed in its elevations and decoration, one has a building which is very unsatisfactory in its plan, especially from the librarian's point of view, and art, as such, is found in the wrong place. The famous "Abbey" frieze, which visitors to the library make a point of going to see, is in the Delivery Room, and through being placed here, forms a distraction and annoyance to those who are there for the set purpose of studying the books. A library should, from first to last, be a setting of books and every thing that detracts from this principle is out of place.

In semi-public institutions excellent and well-proportioned library rooms with the right book atmosphere are to be found in some of the more famous London clubs of the early 19th century, such as the Atheneum, Reform (see page 340) and Travellers. These have had considerable influence on the design of modern libraries of today. The good points and general form of the famous reading room of the British Museum are seen influencing, in part, the design of such famous buildings as the Library of Congress at Washington and Columbia University. It is to be noted with interest also, that the accepted designs for the new reference library at Manchester, and for Leeds University (see Article No. II), have the circular form.

As showing the importance of the librarian acting in close conjunction with the architect in planning important buildings of this class, the most successful public libraries of the present day in the United States such as Cleveland, Philadelphia are the outcome of the existence of this relation. Of admittedly well-planned buildings to mention only two, the British Museum reading room in London, (1855) and the New York Public Library (1911) were largely the development of a librarian,

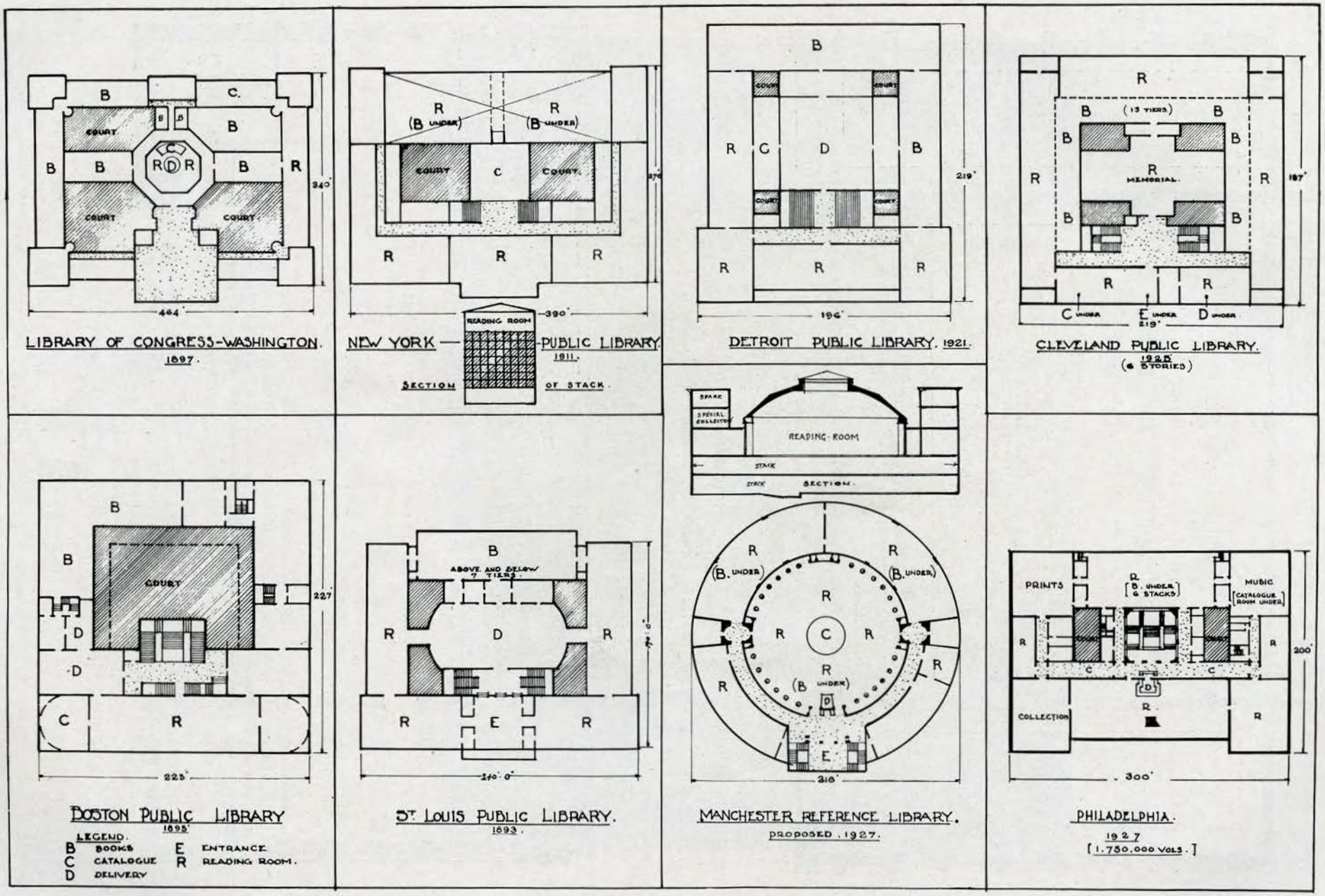
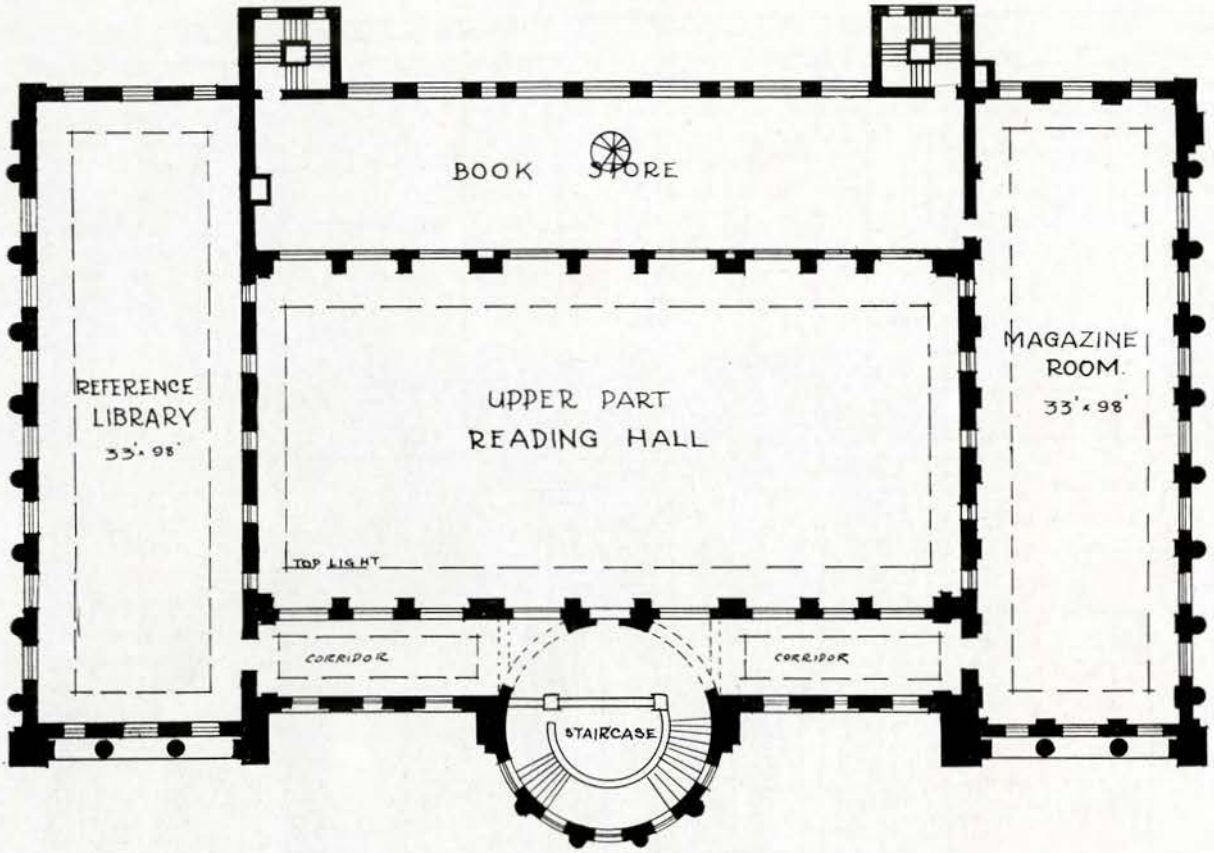


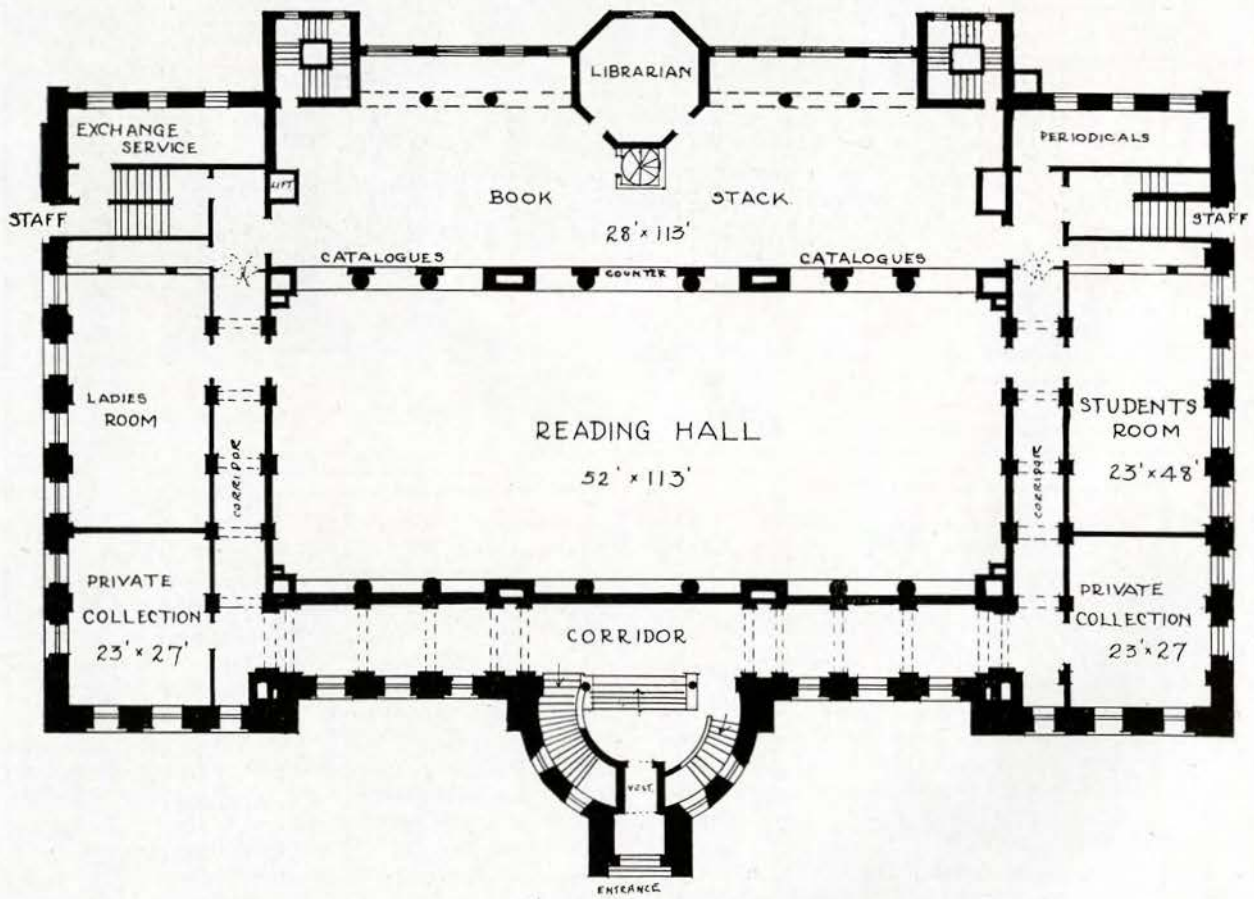
DIAGRAM PLANS—FAMOUS LIBRARIES

P. J. Turner, del.



FIRST FLOOR PLAN

SCALE 0 10 20 30 40 50



GROUND FLOOR PLAN

THE MITCHELL LIBRARY, GLASGOW
Wm. B. Whitie, Architect

Panizzi in the first case, and Dr. Billings in the other.

Amongst the economic considerations that enter into a plan, apart altogether from the expenditure of money for the construction of the building and its maintenance after erection, there are such vexed questions as the distinction to be drawn between the various classes of readers, and "these distinctions," as Mr. C. W. Andrews says, "sometimes require the balancing of directly contrary forces. Thus the time of children and of those who frequent the newspaper room cannot be considered as valuable as those of older and more serious readers, yet it has been found advisable in the modern public library to provide for these classes space near the entrance." In the case of the children it is especially important, for it is obvious that they cannot expect to remain quiet if they are forced to travel a long distance from the entrance, and with regard to newspaper readers, a visit to that room will convince one of the undesirability of the frequenters of this place permeating the rest of the building.

A comparison of the economic advantages of the plans of some of the larger libraries is illustrated by the diagram on page 327.

There is the *hollow square* which is common in Europe but the only conspicuous example in this continent is at Boston. It furnishes of necessity a maximum of well lighted space, but as it has eight facades it is expensive to build, maintain and heat but what is worse it gives the maximum dislocation of books, readers and staff.

The *circular* type is exemplified by the British Museum, the proposed new library at Manchester and the library at Leeds University. These have top lights and administration rooms and special departments placed round the large central reading room. Where one large reading room is the main requisite, this type has many attractive features. It is a natural solution to a problem of this kind and lends itself to good architectural treatment.

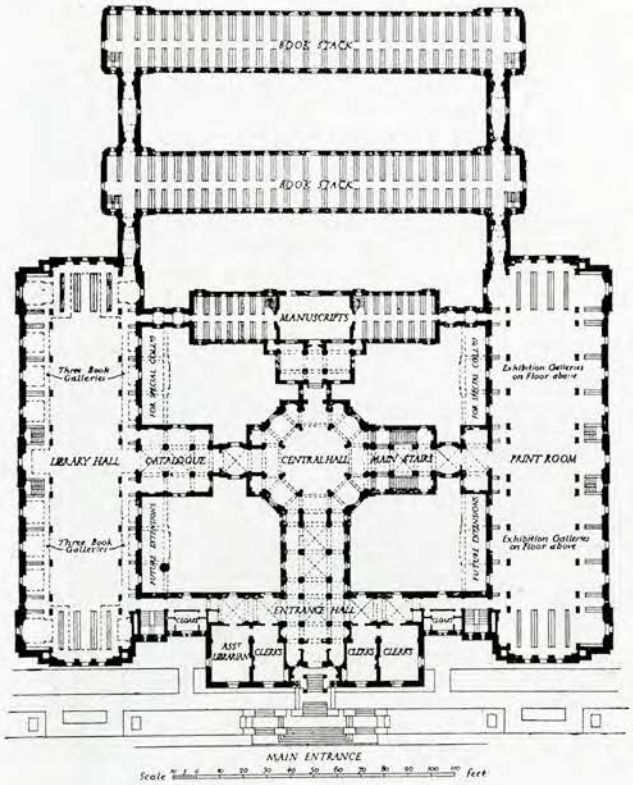
The Library of Congress is the best example of the *Greek cross inside a hollow square*. As the open spaces are not large they do not require elaborate ornamentation, and the cost of heating is less than the hollow square. The passages through the arms greatly facilitate the movements of readers and staff.

The New York Public Library when extended as the original scheme provides will also be of the same type.

The rectangular with two light wells finds favour in such libraries as Cleveland and at St. Louis where the four courts are connected and form two above the principal floor. This form seems to be

READING ROOM—THE MITCHELL LIBRARY, GLASGOW
Wm. B. Whitie, Architect

Built in 1911. A good straightforward plan (q.v.) The building is one of the finest examples of modern municipal architecture in the United Kingdom. Reading room is 113 by 52 feet, for 322 readers, and is entered by the public direct from the vestibule. The counter faces the entrance, behind which is a portion of the reference library, consisting of 40,000 volumes of the books most frequently in demand.



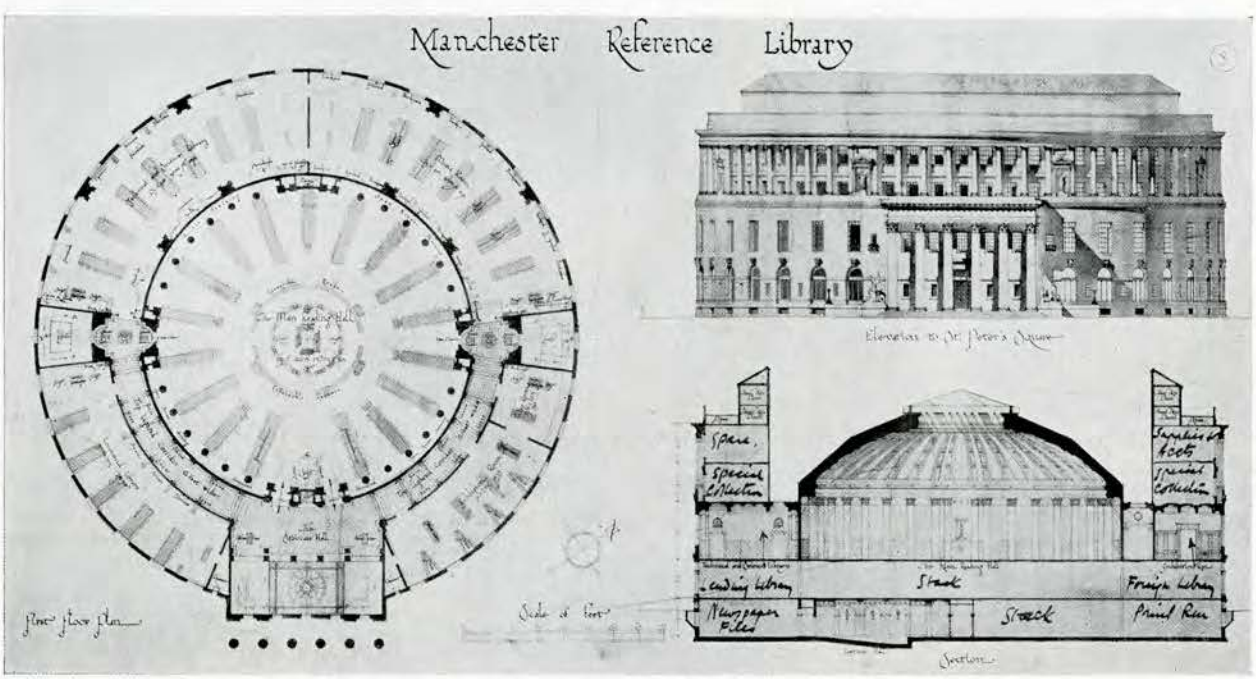
MAIN FLOOR PLAN

INTERIOR OF THE LIBRARY HALL

NATIONAL LIBRARY OF WALES, ABERYSTWYTH

S. K. Greenslade, Architect

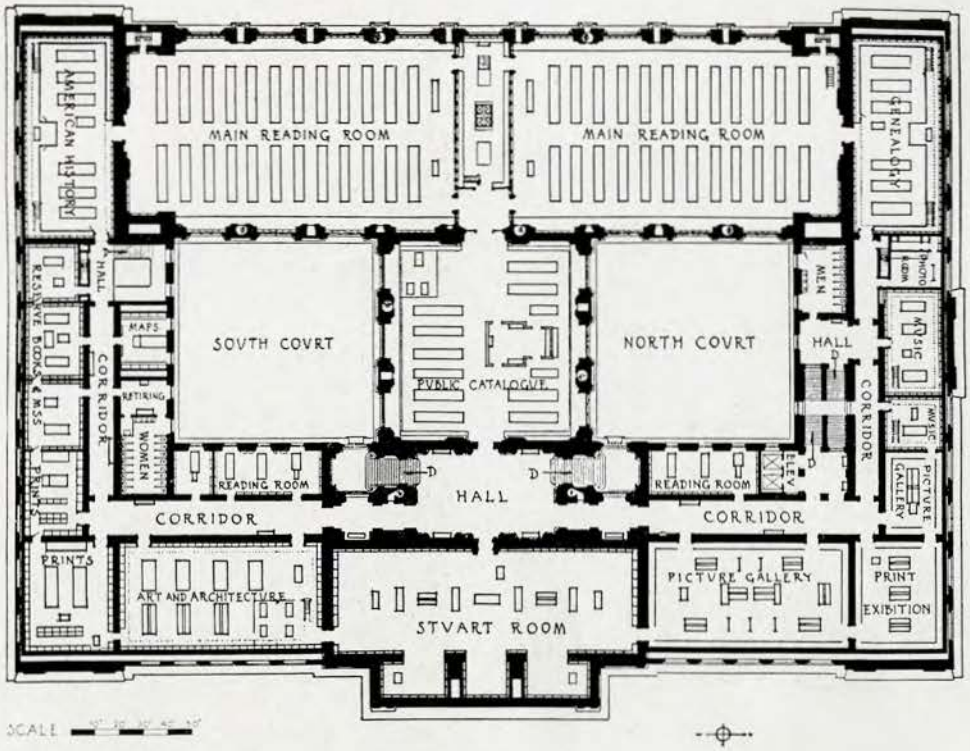
Built in 1914. Main building forms four sides of a square, with a frontage of just over 250 feet. The central hall, 42 feet diameter, gives access on one side to the great library hall, 165 by 47 by 38 feet high; this is provided with alcoves 27 feet wide; on the corresponding side is the exhibition block, with the department of manuscripts connecting the two at the rear. Accommodation has been made for building twelve special collection rooms when required. Total storage of the building will be just 1,500,000 volumes.



MANCHESTER REFERENCE LIBRARY, ENGLAND

E. Vincent Harris, Architect

This building illustrates the stack type advocated by the "verticalists" (see article). The two floors below the main reading hall contain the book stacks, lending library and workshop. The upper floors, which are carried entirely round the central court above the reading hall, are given up to special collections, order and cataloguing room, offices, library school, etc.

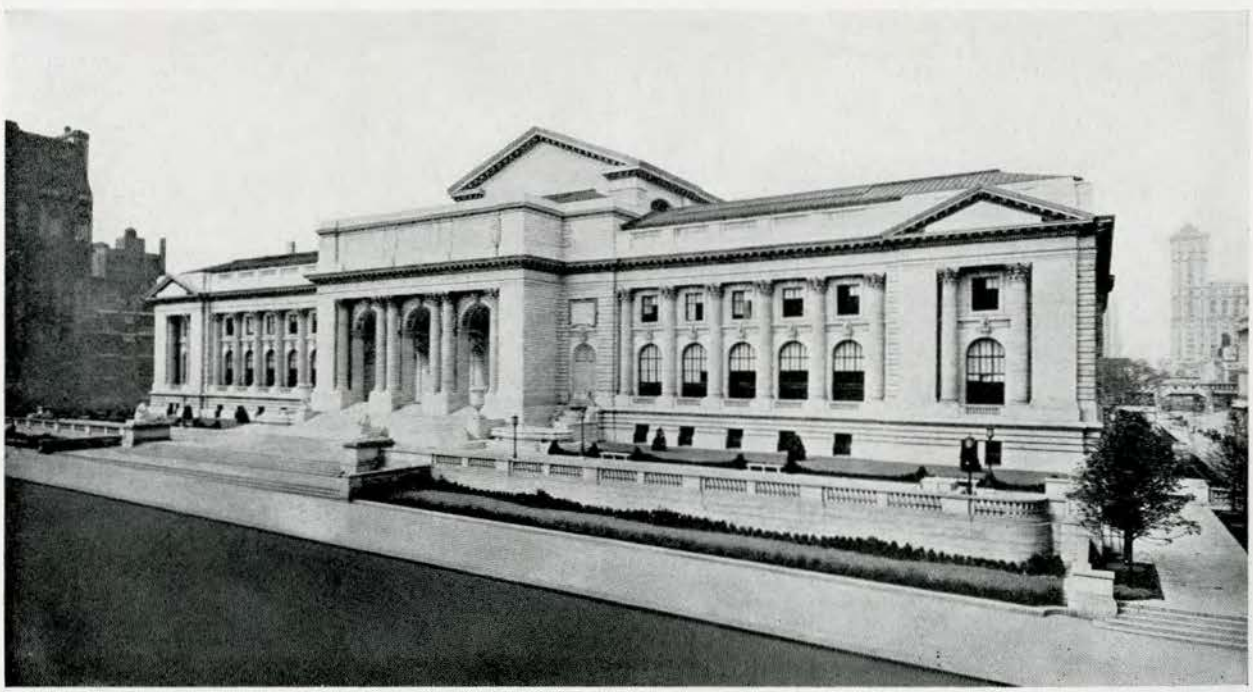


THIRD FLOOR PLAN—NEW YORK PUBLIC LIBRARY

One of the finest monumental libraries in the world. It was opened in 1911 at a cost of $9,000,000.

The main reading room, 274 by 72 feet, is 52½ feet high and the most spacious room in America. With a floor area of half an acre, it seats 768 readers. Situated at the rear of the building and high above the street, it is well placed clear of street noises.

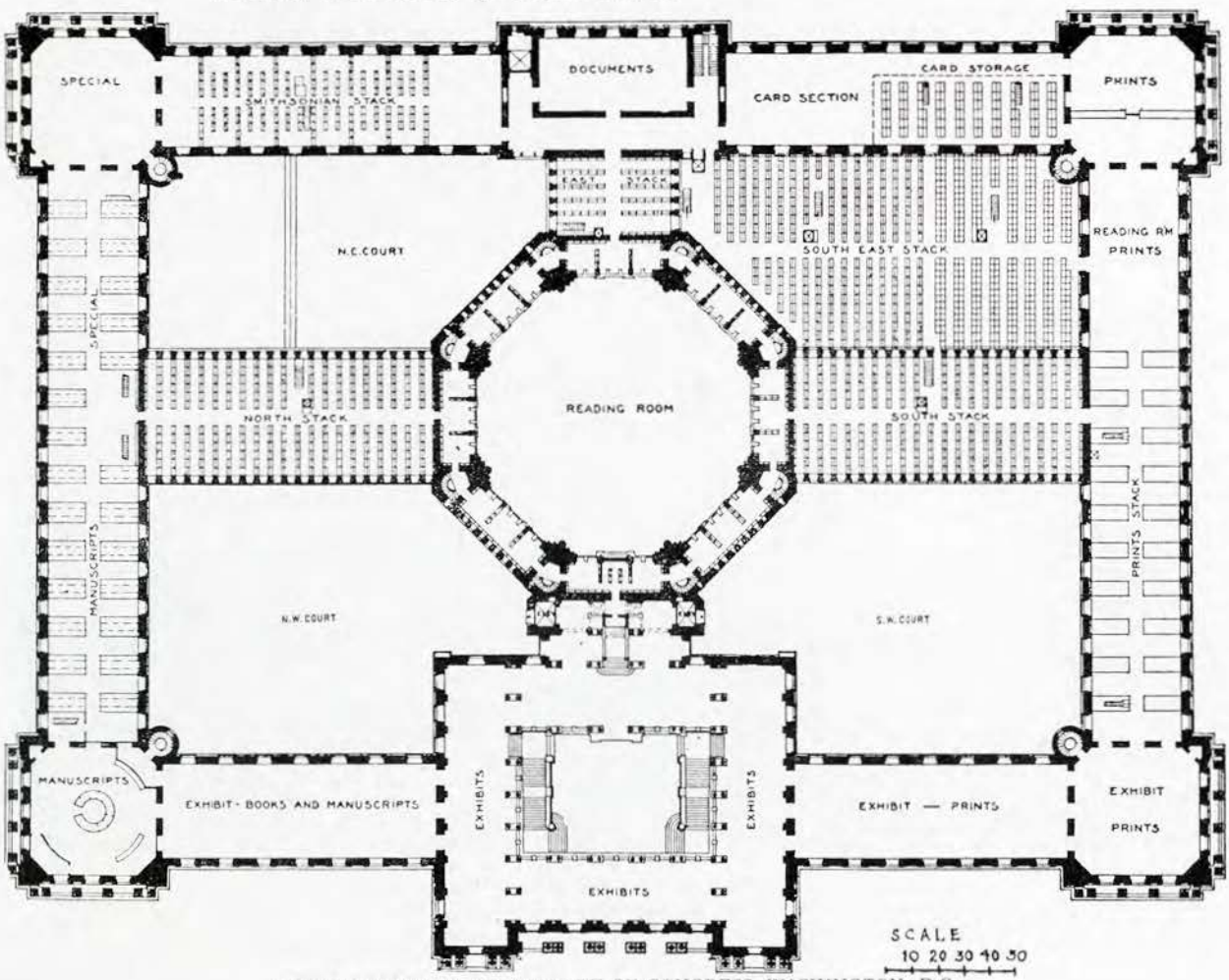
The shelves on the walls of this room contain a collection of about 22,000 volumes and the stack below, which supports the floor, is seven tiers high, contains 63 miles of shelving and gives storage space to about 2,500,000 volumes.



NEW YORK PUBLIC LIBRARY
Carrere & Hastings, Architects

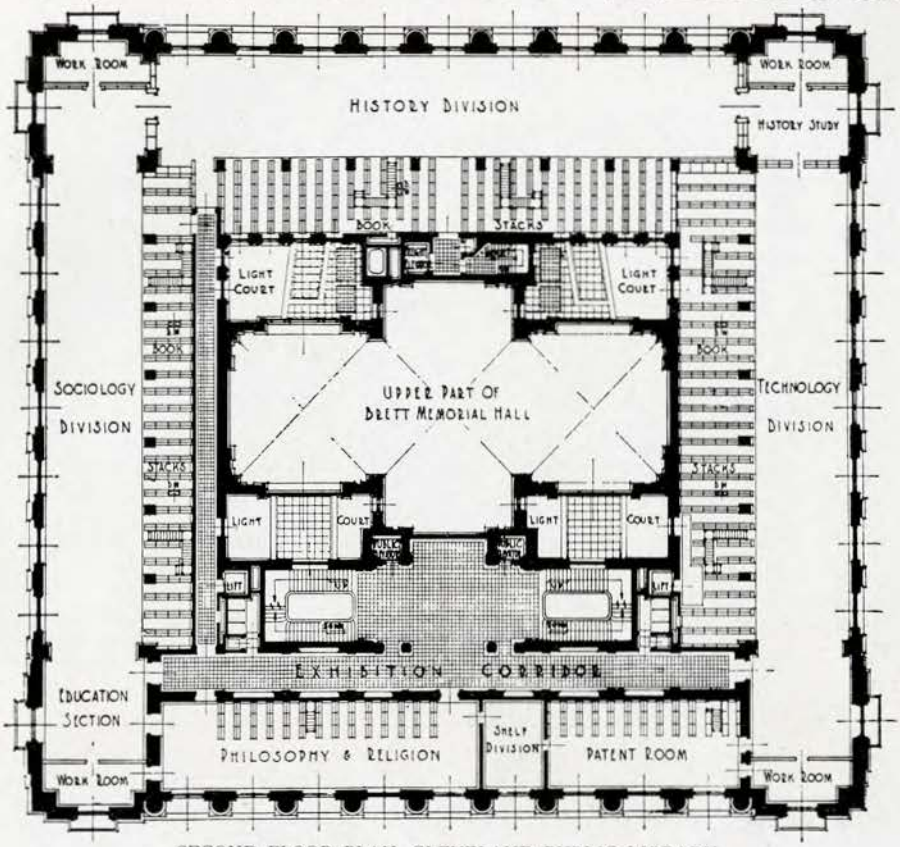
LIBRARY OF CONGRESS—WASHINGTON, D.C.

Built in 1897. 470 by 340 feet. The central feature is the main reading room' 100 feet in diameter and which is about 125 feet high to the centre of the dome. This room can accommodate 200 readers at one time. The four main stacks, which are nine decks high, have a capacity of 2,645,000 volumes.



SECOND FLOOR PLAN—LIBRARY OF CONGRESS, WASHINGTON, D.C.

Smithmeyer & Peltz, Architects



SECOND FLOOR PLAN, CLEVELAND PUBLIC LIBRARY

Cleveland Library is almost identical in size to the building at Detroit; 219 by 197½ feet. The inner court above the second floor is 78 by 114 feet, with four smaller courts extending down to the basement-floor level. The stacks are built around the court, the reading room being to the outside.

CLEVELAND PUBLIC LIBRARY
Walker & Weeks, Architects

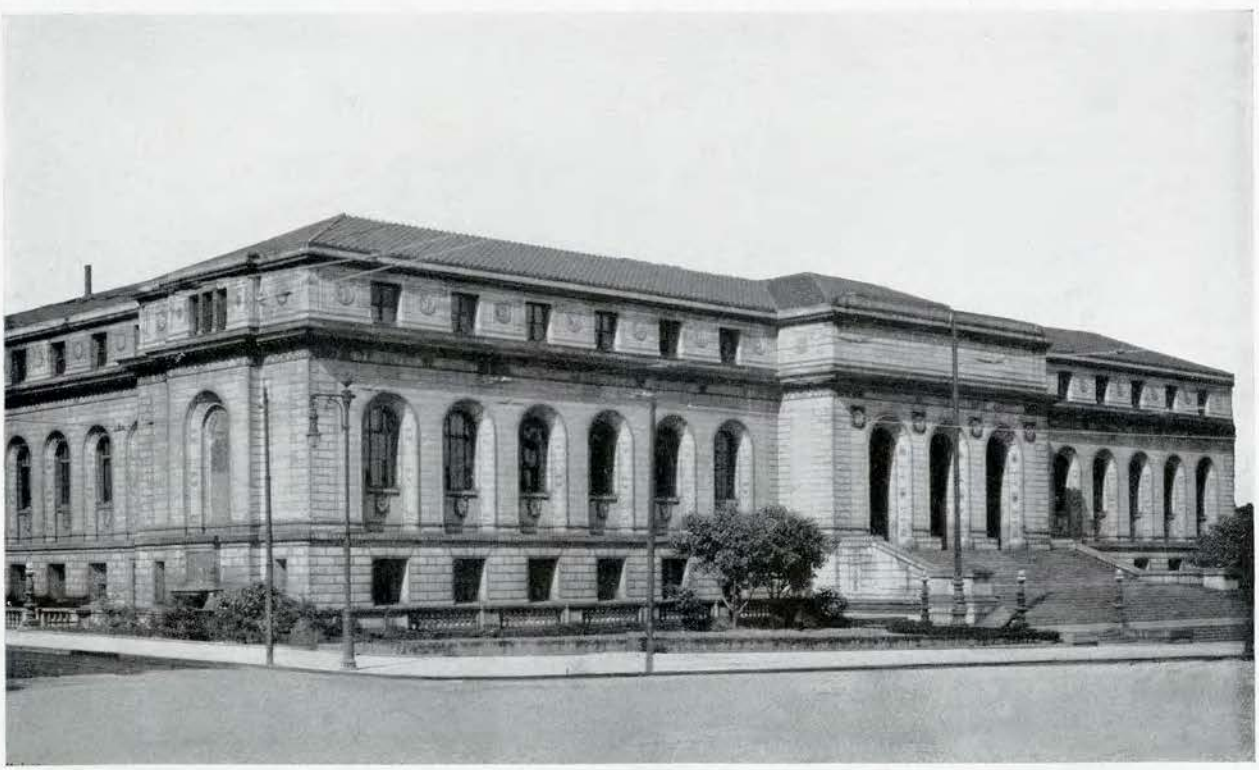
INDIANAPOLIS PUBLIC LIBRARY
Paul Cret, Zantzinger, Borie and Medary, Architects

A clever adaptation of Greek Doric to a modern building with refined detail, and the right placing of ornament. Building is 120 by 92 feet deep.

as good a type as any for public libraries in large cities.

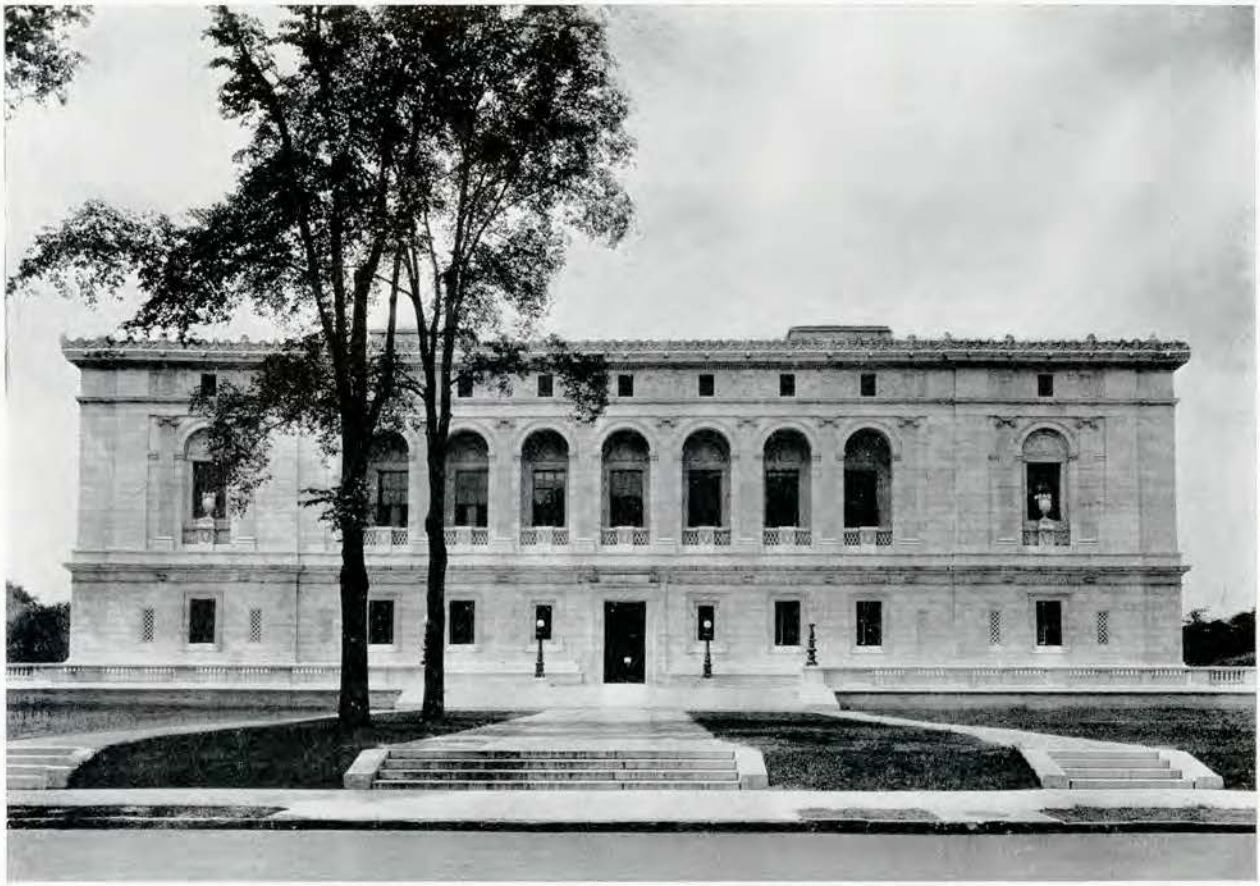
The recent completed library at Philadelphia is a very compact plan with two small courts, and Detroit another fine building has four courts of comparatively small dimensions.

It goes almost without saying, that all large public libraries should be placed on island sites, for a fine building deserves a fine setting apart altogether from the fact that allowance should be made for expansion. This has been invariably the



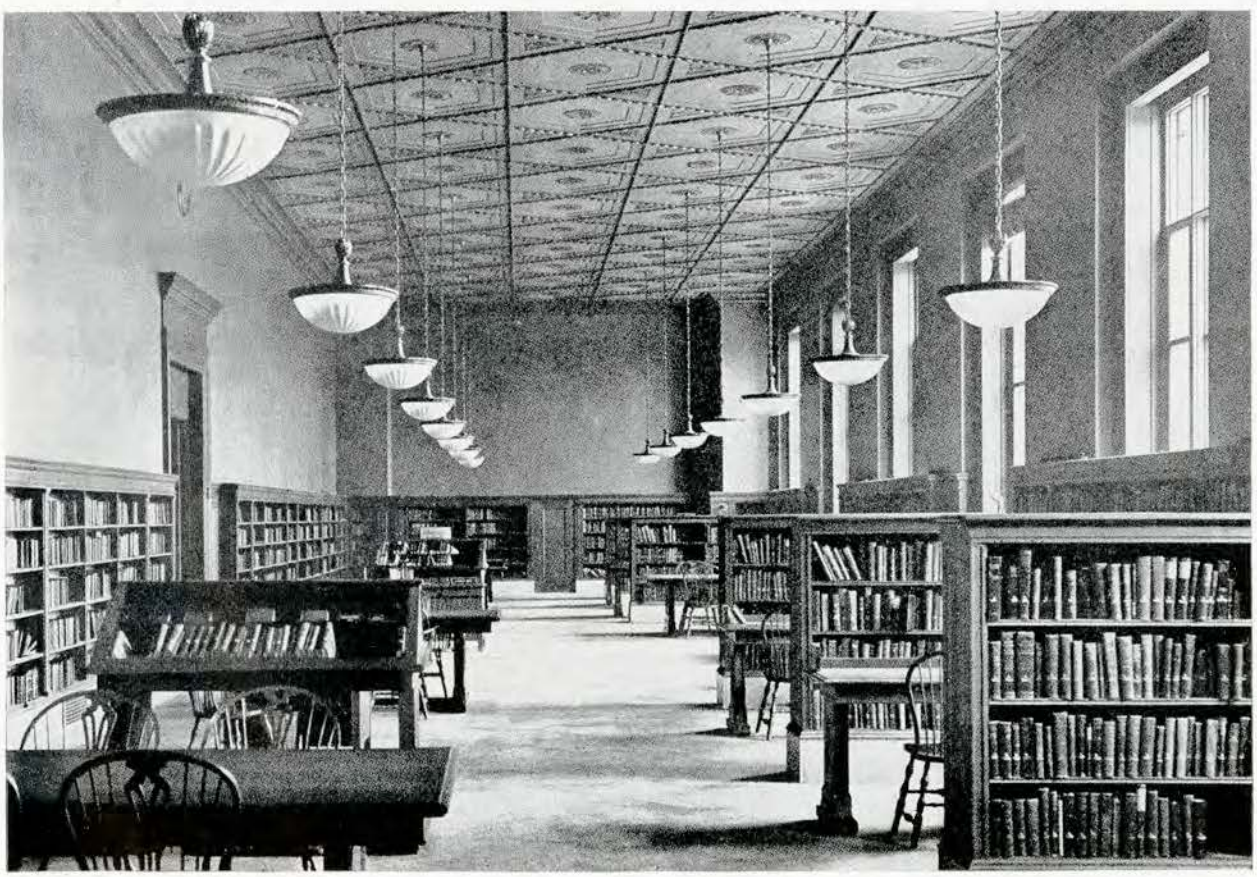
ST. LOUIS PUBLIC LIBRARY
Cass Gilbert, Architect

Built in 1893. The stackroom, seven tiers in height, has storage for about 800,000 volumes. It has an impressive, central delivery hall, top lighted. The stackroom, as is very usual in this type of building, is at the rear. Bridges across the two courts give access from the delivery hall to the reference room on one side, and the open shelf room on the other *(see p. 327).* *On the ground floor are placed the children's and newspaper rooms.*



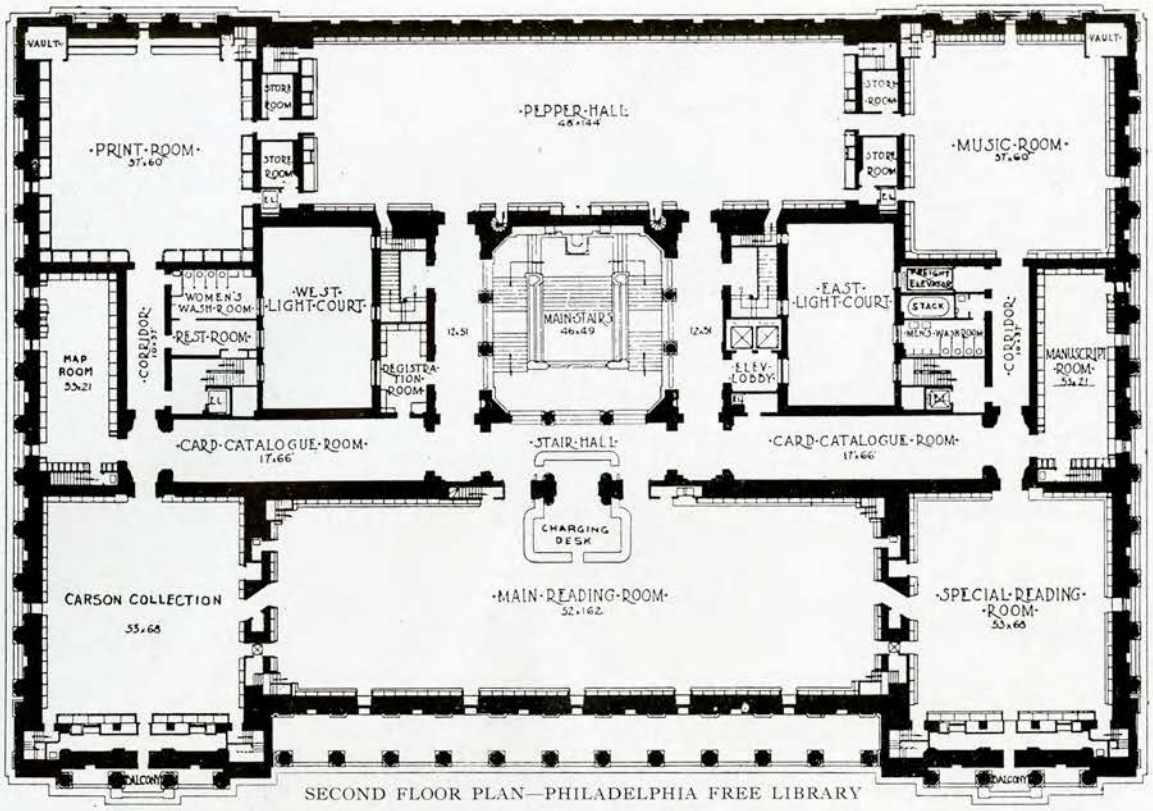
DETROIT PUBLIC LIBRARY

Built in 1921 of white marble. Its cost was $2,775,000, exclusive of the site. The building has a present capacity of 800,000 volumes. The showroom of the library is the great delivery room, 75 by 75 by 36 feet high *(see p. 327).*



OPEN SHELF ROOM—DETROIT PUBLIC LIBRARY

Cass Gilbert, Architect



SECOND FLOOR PLAN—PHILADELPHIA FREE LIBRARY

Opened in July, 1927. One of the most recent and best-equipped libraries in the world. It has a frontage of 300 feet and a depth of 200 feet.

All the equipment shelves, furniture, etc., are of metal, the library having a capacity of 1,750,000 volumes.

The main reading room is 162 by 52 feet, with a balcony all round and a book capacity of 30,000 volumes.

The total cost of the site, building and furniture was $6,300,000.

PHILADELPHIA FREE LIBRARY
Horace Trumbauer, Architect

rule adopted in the United States. In England, however, on account of costly land values and difficulty in obtaining central sites, library buildings very rarely have the right setting, and fine buildings usually rise up sheer from the street front and are shorn of half their effect as a consequence. The John Rylands Library at Manchester is a tragic example of this, a fine building which one hardly notices until dead in front of it.

It is not so many years ago that the reading room was the ruling factor in deciding on the plan of a library building, now-a-days it is the stack room that holds first place.

In the older libraries the books are stacked on shelves in the reading room, now a separate bookstore of ranges of shelves rising one above the other is the general rule. This special form of construction of the steel shelf and the vertical bookstack with its range of hand high shelving, resting on nothing but itself, has revolutionized the idea of the bookstore and affected materially the plan of library buildings.

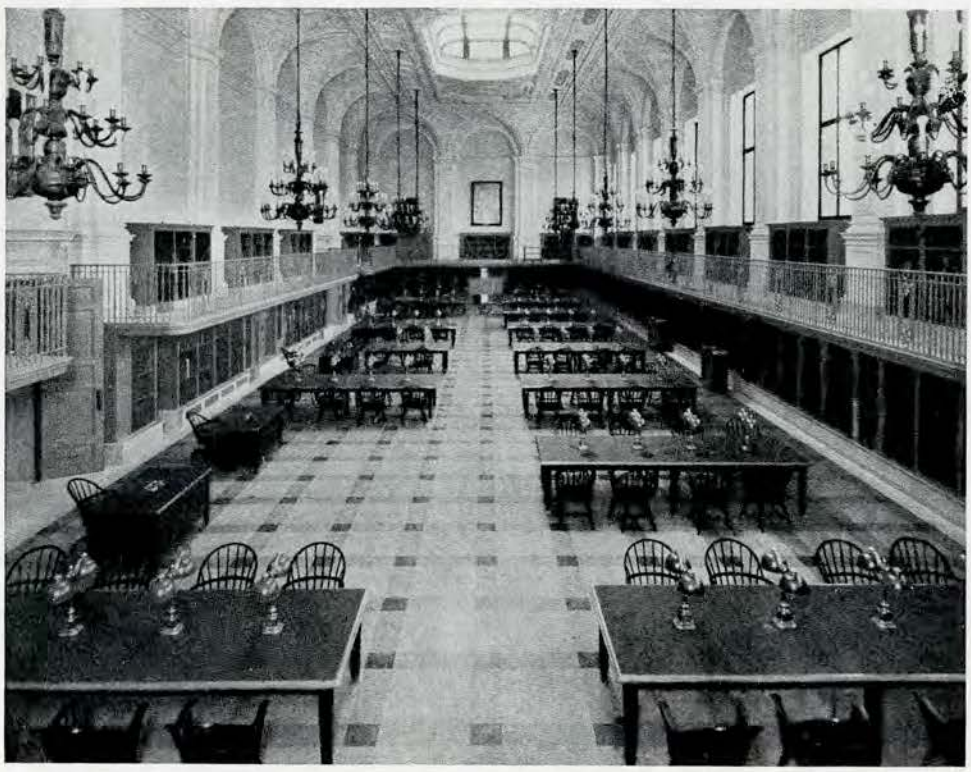
This bookstack department must in a properly planned library be in organic and intimate connection with the other parts of the building which it serves.

This storing of books in a separate department instead of on shelves on the walls of the reading rooms has affected materially the planning of library buildings during the last thirty years. The process has been a gradual one and it is still being developed.

The shelving itself has become more or less standardized as to spacing, widths of aisles, heights of ranges, etc., and it is manufactured by a few specialists in this type of construction from whom useful information on such particulars can be obtained.

Mr. Edward L. Tilton in the "Architectural Forum," of December 1927, gives some interesting figures as to costs and capacities of bookstacks. As a general guide 20 volumes may be assumed to require an area of 1 sq. ft. i.e., where only one tier of seven shelves is provided, forty volumes if two tiers are installed, sixty if the stack is three tiers high and so on.

Consequently if a library wishes to store in the stackroom 500,000 books it may be assumed as a general guide that the floor area or size of stackroom—one tier of seven shelves in height—would be 25,000 square feet or 500,000 divided by twenty, if 2 tiers in height divide by forty, if three, divide by sixty, and so on.



PEPPER HALL—PHILADELPHIA FREE LIBRARY
Horace Trumbauer, Architect

Pepper Hall, a fine room 144 by 48 feet, placed directly over the book stacks. It has 25,000 volumes distributed on its shelves.

As the weight of each tier with its complement of books can be figured at 125 lbs. per square foot, and two tiers high will be 250 lbs., one can under stand the heavy weights these steel frames of bookstacks have to carry when they rise many tiers in height. Working on such a basis the stack at the new Sterling Library at Yale University which is to be 16 stories high would figure out at 16 by 125 lbs. or 1 ton per square foot over the whole area.

As a fairly reliable guide the standard form of stackroom may be figured to cost with shelving, floors, etc., complete, fifty cents for each cubic foot.

Mr. Tilton gives the following general rules regarding the design of stacks which are of service to anyone who has to make a selection from the

different types obtainable, all of which have their respective good points:—

"(*a*) Narrow upright supports between shelves make for economy. The space of a half-volume gained means 1½ to 2 per cent increased volume capacity; that is 1,500 to 2,000 volumes additional in every 100,000.

(*b*) The provision for electric wires and switch plates on the stack ends is a point to be observed.

(*c*) The method of support for the electric conduits along the stack ceiling is important. They should not be wired to small beams but holes should be drilled through the beams to support conduits.

(*d*) Many stacks are finished green, the color baked on. It is possible, however, to have the stacks finished in cheerful, light tones, though they soil more easily with the constant use they receive.

(*e*) If several superimposed stack stories are required, some makes of stacks are to be preferred.

(*f*) The usual length of shelves is 3 feet, but there is an alternate length of 3 feet 6 inches, which permits an appreciable increase in volume capacity.

(*g*) The shelves are usually made of solid sheet steel, but there is also a shelf consisting of a parallel series of inverted U-shaped sections, connected with separators, which is stiffer than the plate shelf and which is often used.

(*h*) The ventilating slit below the bottom shelf, at the floor, should be vertical, not horizontal, as it is in the older stack types (see p. 341).

(*i*) The shelves should be adjustable every inch in height. The story height from floor to floor of each tier should be approximately 7 feet 6 inches, in some cases it can be 7 feet. Less than that allows insufficient headroom for the ceiling lights in the gangways. The heights given admit of seven shelves with an average spacing of 11 inches and permit the lowest shelf to be raised above the floor with a vertical ventilating slit, and also allow for thickness of supporting steel and flooring of the tier above, which are important details.

LOS ANGELES PUBLIC LIBRARY
Bertram G. Goodhue, Architect

Built in 1926. In this building this great architect gives of his best, and has produced a design, Spanish in type, that is distinctly refreshing, as being less formal in character than those found in most cities.

The stackroom has been decentralized, and arranged in four sections adjacent to the departments which they serve. Mr. Perry, the librarian states: "We discarded the usual interior arrangement and substituted a plan which makes ours unique among libraries of the country with the exception of Cleveland which, though dissimilar in detail, furnished part of our inspiration. The main three-storey building is 200 by 209 feet, it has book capacity of 1,212,500 volumes and cost, with equipment and furniture, $2,300,000.

The building, in its clever massing and proportions, is frank to the last degree. Limited as to cost for so large a building, Mr. Goodhue has designed a building where plain surfaces devoid of ornament predominate. Column arches and a dome of the original scheme have disappeared for pylons, lintels and a square tower, and the building is distinctly very satisfactory and expressive of its purpose.

REFERENCE ROOM—LOS ANGELES PUBLIC LIBRARY
Bertram G. Goodhue, Architect

(*j*) For the stack flooring avoid glass, once much used from a fallacious idea that it admitted light to the upper shelves of the tier beneath. The light reflected from white marble, painted concrete, or similar flooring is better."

The two general types of metal stack are illustrated in the diagram shown on page 341 and though the "bracket type" is a little more economical it is not so serviceable or good looking as the "standard type."

NEWSPAPER ROOM—LOS ANGELES PUBLIC LIBRARY
Bertram G. Goobhue, Architect

The small section that accompanies the diagram plan of the New York Public Library indicates clearly the position of this world famous reading room, which is built over the seven floors of book tiers that form the stackroom (see p. 327).

The stackroom at the rear of a square or rectangle is a very usual form in the American library plan. It is to be seen at St. Louis and Detroit where the stackroom is 7 tiers in height. At Philadelphia it is 6 tiers in height, the fine reference room known as "Pepper Hall" being placed over the stackroom, in a similar way as the main reading room at New York.

The public library at Cleveland (1925) six stories in height has adopted a plan which is a radical departure from the hitherto accepted practice of a main stackroom extending from basement to roof.

"In place of this time-honored scheme, the plan devotes practically the entire perimeter of the building to reading rooms, with a belt of stacks immediately inside the reading area, separating the reading rooms from the central area of the building. In addition to this, the floors throughout have been designed of sufficient strength to carry a double or triple tier of stacks, according to the height of the story. By this provision stacks can be placed

LIBRARY—REFORM CLUB, LONDON, ENGLAND
Sir Charles Barry, Architect

Built in 1837. The club has always maintained a literary atmosphere which is realized at its best in its splendid library. This room is of excellent proportions, 108 feet long by 25 feet wide. The detail is virile and individual. The window over the chimney-piece on the left looks into the central hall.

In the Library of Congress (1897) which is almost a square the original bookstacks connect up the main octagonal reading room with the smaller reading rooms and as placed are of immense service to the fine central main room.

This monumental library building has suffered for want of sufficient book storage, and already two of the original light courts have been given over to additional stackrooms.

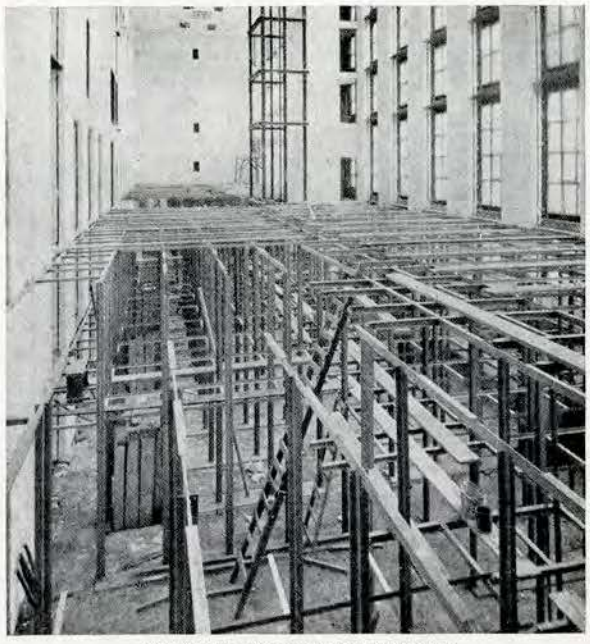
One appreciates the fact that the purely utilitarian type of building that has grown from the requirements of the stackroom, has given the architect an opportunity to develop a distinctive library style so far as the departments containing the stacks of books are concerned.

The long vertical lines on the elevation with the small windows lighting the aisles of the bookcases have been very effectively treated in such buildings as Detroit, Washington, New York and elsewhere.

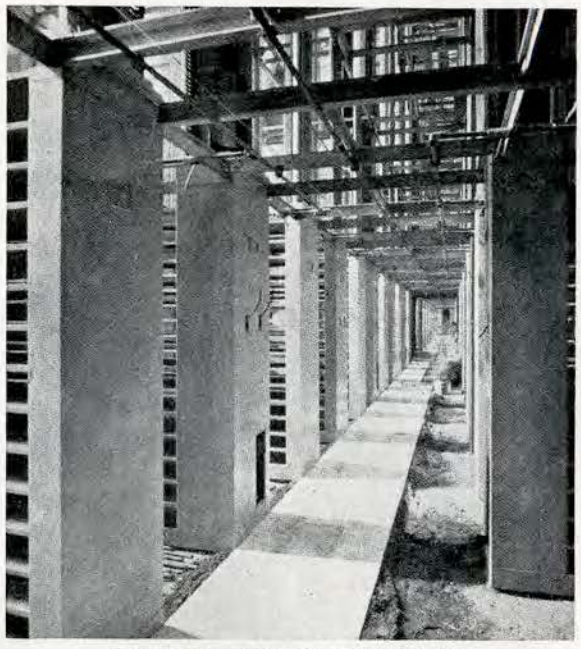
in any desired location, bringing the books on each floor adjacent to the places where they are to be used, and making a general open shelf policy practicable.

"There are in all thirteen tier levels of bookstacks supporting 250,000 linear feet or over forty-seven miles of shelving. The books are shelved in a divisioned arrangement according to subject. The building contains sixteen reading rooms, some of them being from one hundred to nearly two hundred feet in length."

The lighting of these rooms is very efficient, as the bookstacks are on the inner side of each room. Such a library requires naturally, a large income to administer and this means a very competent and efficient staff to supervise the large number of reading roms, the cataloguing of the books as well as placing them according to their right subject in the various reading rooms. It is of interest to



Erecting the framework for stackroom



Beginning the installation of book shelving

DETROIT PUBLIC LIBRARY

note that the one large general reading room entirely loses its preeminence at Cleveland and that the Brett Memorial Hall given up to periodicals entirely occupies the central position.

The overall sizes of the libraries illustrated by the diagram on Page 327 are as follows:—

		(Feet)
Library of Congress, Washington	1897	464 x 340
Boston Public Library.....	1895	223 x 227
New York Public Library.....	1911	390 x 270
St. Louis Public Library.....	1893	240 x 190
Detroit.....	1921	196 x 219
Cleveland.....	1925	219 x 197
Manchester (England) proposed	1927	318 dia.
Philadelphia.....	1927	300 x 200

In practically all the large libraries on this continent it will be noticed that the relationship of bookstacks and reading rooms is a horizontal one, that is, the floor of the reading room is on the same level as one of the ranges of the stack.

Mr. Jast, of the Manchester Public Libraries, contends that the ideal relation of the stack to the public services is the *vertical* relation. This is exemplified in the reading rooms of the New York Public Library and also at Philadelphia. But it exists in both examples only in the case of one reading room, and the special libraries and other rooms have no such intimacy with the stack.

An interesting development of this principle is to be found in the accepted designs for the new Manchester Reference Library and also for the proposed Leeds University (see Article II). The stackroom in these examples has been continued for the whole area of the building under the main floor. In this way it is contended by those who advocate this position for book storage, that the more books you can store on one level the better, in a word that breadth of stack is more convenient than height. To put the proposition in another form it is agreed that the better way is to store the books horizontally *through* the building rather than concentrating the books at the rear of the building.

There exist among librarians advocates of both systems, and one might refer to them as the "horizontalists" and "verticalists" and though the former have had things pretty well their own way up to the present, there are certainly many good features in the "verticalists" programme which no doubt will affect library plans in the future.

In the diagram section of the Manchester Library it will be noticed that a certain convenience is occasioned and econmy of labour secured by this method. Formerly ventilation and the lack of natural lighting would have been considered an objection to this system, but this does not carry much weight now-a-days when natural lighting is not by any means an essential.

Plans for libraries are always changing and from the point of view of economy experts are seriously considering the advisability of having certain of the departments that go to form the whole work of a library located *away* from the main building together with many of the less used books.

In the heart of a large, growing city it can readily be understood that it is economically unsound to store books that may be referred to only once or less in six years. Very often such books will be occupying in floor area thousands of square feet of land that may be worth fifty dollars and more a foot, and such storage becomes then absurdly expensive.

Consequently, the plea made by Professor Eliot of Harvard in 1900-1, that books in the older libraries would be better reclassified as "live" or "dormant," and that the latter group should be housed in a special storage structure of simple construction on relatively cheap land, is a good one.

Though the suggestion did not find favour at the time, owing to the absence of any easy and rapid transportation between a central library building and the cheaper bookstore placed a mile or so away, the motor-truck of the present day has overcome the objection.

Providence, R.I., following out the idea, has recently adopted such a scheme by purchasing an old building and making it fireproof, and have now a bookstore located away from the Central Library in which they can store "dormant" books at about

ten cents a volume, that formerly cost approximately a dollar a book, when under the roof of the main library.

The tendency at the present time is for other departments that are at present housed in the Central Library to find accommodation outside its walls. Take the bookbindery and printing departments for example. No printing establishment, running on an independent business basis, would find it practicable to maintain its plant in a granite building on a main street of a great city, as the rent would be prohibitive, but some public libraries can and do, and the same applies to repair shops, garages, etc.

Cleveland has set a good example, by establishing its workshop and garage elsewhere than at the main building, so planning the garage that it will provide an overflow book storage space to the Central Library whenever that becomes necessary.

No doubt other libraries will be adopting, as time goes on, the example set by Cleveland and Providence.

As the librarian of Providence said at the recent American Library Association Conference at Washington:

"The past half century has witnessed the beginning of the breaking down or the decentralization of the big single library, and the next half century will be characterized by a further breaking down of other administrative activities of the Central Library. Book storage is, of course, the most important and the biggest of all influences. But others—bindery, printing plant, repair shop or garage—will all pass under careful scrutiny as they cling tenaciously to their traditional places."

Libraries will grow and expand in their activities and they are not exempt from the operations of the universal law of evolution under which organisms develop from the simple to the complex. What exactly will be the form that this growth will take in the future it is hard to say, but the provision of some space, at all events, beyond current requirements is a reasonable precaution to take at all times. If the ground is too limited to permit of the building being added to, a necessary safeguard will have been made against the too rapid arrival of that bugbear and snag of all libraries, congestion.

NOTE—Descriptions and illustrations of Canadian Libraries have appeared in former R.A.I.C. Journals as follows: Toronto Public Library (May-June 1926); Montreal Public Library (July-Aug. 1926); Edmonton Public Library (July-Aug. 1926).

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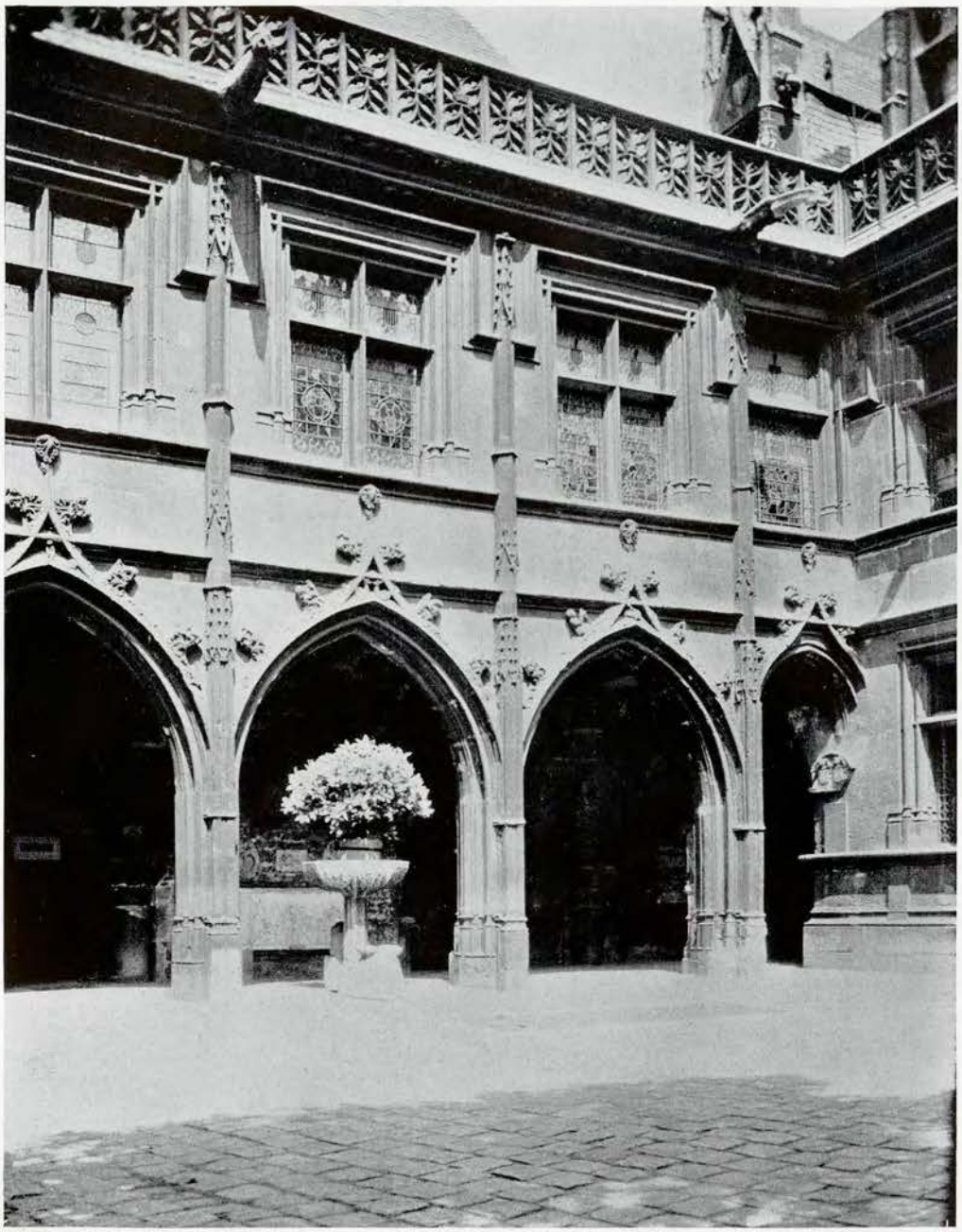
EUROPEAN STUDIES

From Photographs by F. Bruce Brown, M.Arch.

NUMBER XLVII



DETAIL, MUSÉE DE CLUNY, PARIS

EUROPEAN STUDIES

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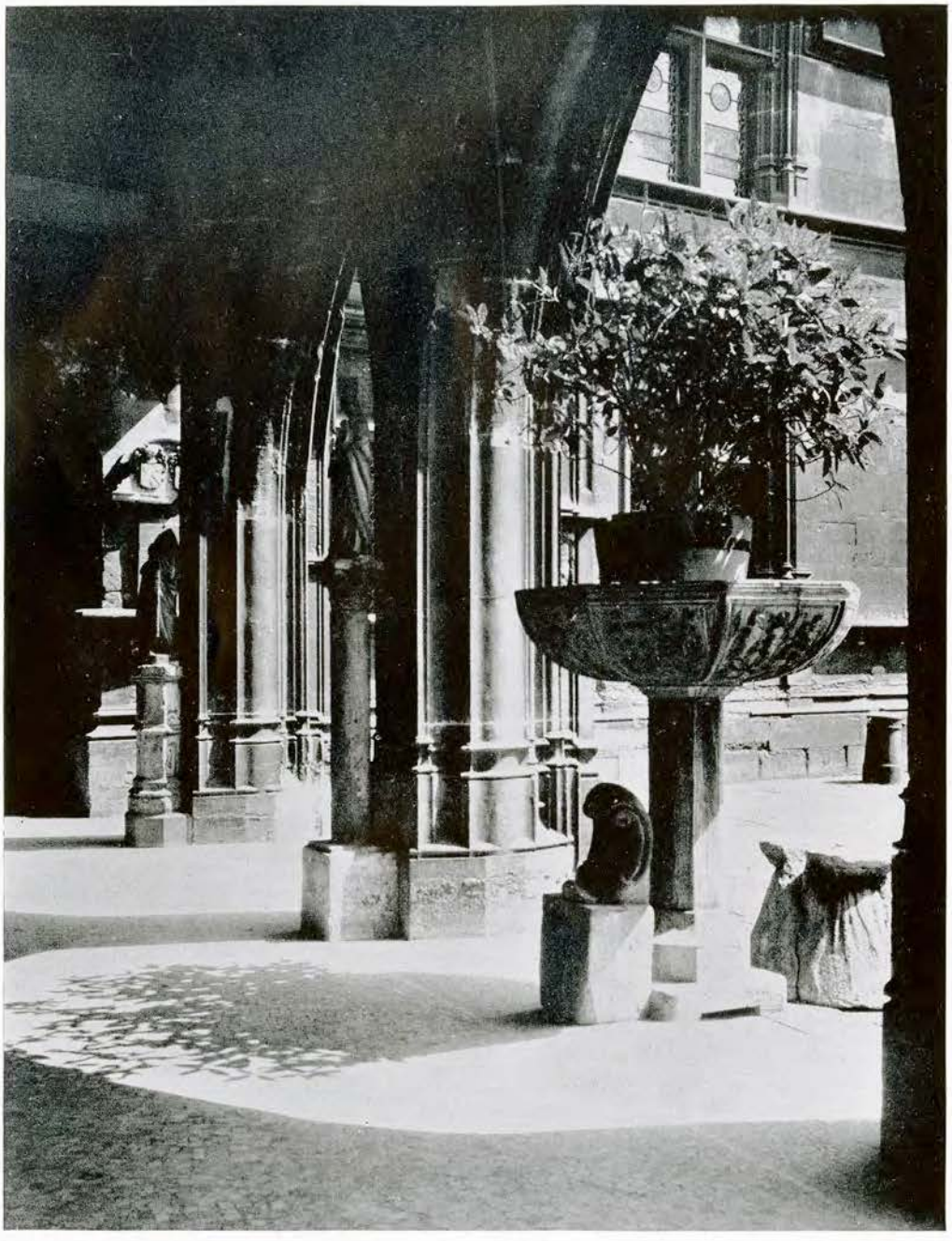


DETAIL, MUSÉE DE CLUNY, PARIS

Five-Day Week for the Building Trades

ACCORDING to a United Press despatch more than 60,000 workers in various crafts of the building trades in New York will be granted a five-day week, as a result of an agreement recently promulgated between the Building Trades Employers Association and the Building Trades Council. In this connection it is interesting to note that the Building Trades Council of Vancouver has approached the Architectural Institute of British Columbia with an enquiry as to their attitude concerning the adoption of a five-day week for building trades craftsmen in the cities on the Pacific coast.

It is claimed that Saturday morning work is both unsatisfactory and uneconomical for the contractor, and that the five-day week would provide employment for more craftsmen, without increasing the cost to the owner. The Architectural Institute of British Columbia has given much thought to the matter, and has advised the Building Trades Council of a resolution unanimously adopted by their council, about two months ago, favoring the adoption of the five-day week.

As the matter is of considerable importance to the profession, the full text of the reply to the enquiry is printed herewith.

MR. W. PAGE, Secretary,
Building Trades Council,
531 Beatty Street,
Vancouver, B.C.

Dear Sir: Replying to your letter in which you enquire concerning the attitude of the council of the Architectural Institute of British Columbia on the problem of the adoption of the five-day week for Building Trades craftsmen.

I should first, perhaps, inform you that the council of the Architectural Institute of B.C., in order to save duplication of officials, is also the committee in charge of the chapter affairs for the Lower Mainland, representing about 65 per cent. of the members of this Institute, so this reply is from both the Institute and the local council.

From time to time during the last two or three years my council has considered the question of the five-day week, and about a month ago, by unanimous resolution, declared that it was in favor of its adoption by all branches of craftsmen comprising the building trades, in this district, just as soon as existing agreements are fulfilled.

The curious condition that building trades craftsmen do not get as many days' work per year in this district in this very favorable climate as they do in districts where there are long periods of heavy frost, has always been a matter of comment as far back as the writer can remember (1888). It is a condition which is so often the cause of a craftsman having to take any kind of job in order to make a living, and is very detrimental to the development of a high order of trades craftsmanship. It is clear that the five-day week, when applied to a job that has to be completed on a contract date, will mean the employment of ten per cent. more men (or a man having ten per cent. more employment) without adding to the cost of the operation.

In other words, a job that takes ten men to accomplish in five and one-half days, as arrangements exist today, will be accomplished in five days by eleven men.

For some time it has been a matter for discussion amongst the architects as to the very unsatisfactory results of the Saturday morning work. Of course a certain amount of work is always done, but the accomplishment never seems to stack up against the production of any other half day. It is absolutely unsatisfactory for some of the building trades to work Saturday morning and for some not to work—because in modern methods of construction the building trades must synchronize, and in many process details interlock, and if some trade is not on the job when it is wanted there is a monetary loss, which always falls on the owner, notwithstanding some contractors would like the owner to believe that they absorbed this loss. Of course, on certain occasions of specific contract, they may do so; but it is not often, especially as the trend of business seems to be to grant the contractor a fixed sum of percentage on costs for the use of his services, organization and plant—and so all losses which occur when work is delayed from some trade not being on the job falls on the owner.

Of equal importance, with the technical service of preparation of plans, details and specifications, is the common law duty of protection of the owner's interest by the architect, which, amongst other things, involves co-operation with the craftsmen in an endeavor to obtain the quantity, quality and nuance of the work called for in the plans and specifications, which the owner is purchasing, and on the measure of this co-operation depends the success or failure of the design both in its artistic realization and craft workmanship—so that, in the opinion of my council, any rearrangement of the hours or conditions of labor that will produce improvement, or economy, in the intricate operations of building processes, will be found to be of benefit also to the owner.

In the adjustment of any labor matters the building crafts in all trade union subdivisions should remember that the conception of a building operation and the arrangement for money to pay for wages and material are the function and duty of the owner, and not of the contractor, and the owner's opinion on labor matters can be obtained from any organization of architects, hence, as representing the owner in building operations, our opinion in these matters is of more importance than that of any group of contractors, whose function, whilst necessary and worthy of proper remuneration, is only one of organization and the supply of plant, with a private speculation on a rising and falling material market for a little additional profit on the side. The material supply firms should not be considered. Their function is to supply the material specified at market prices, and they have nothing to do with the craftsmen on a building or how many hours they work, or their remuneration.

Modern processes and material have increased building production, notwithstanding the reduction in the hours of daily labor which have steadily decreased during the last twenty years, as it has increased the production of other commodities.

It is also very interesting to note that the cost of building does not seem to have much effect on

the volume of work. Take the statement compiled by the Associated General Contractors of America, as published by the United States Department of Commerce, Survey of Current Business, February, 1929, pages 64-65 (being the latest half-yearly book)—the unit cost of building in 1913 is taken at 100, the unit cost for 1928 is 199—about double the cost.

The construction volume for 1913 is taken at 100 and the volume is 197 for 1928, or about one per cent. less building in 1928 than in 1913; this on a Canadian and United States building programme of six billion, eight hundred million for 1928, which in 1913 would have cost only half that amount.

I make no apology for this rather long letter, the importance of the subject demanded a full explanation of our viewpoint as architects, representing the owners, who provide the credit for the construction of building operations.

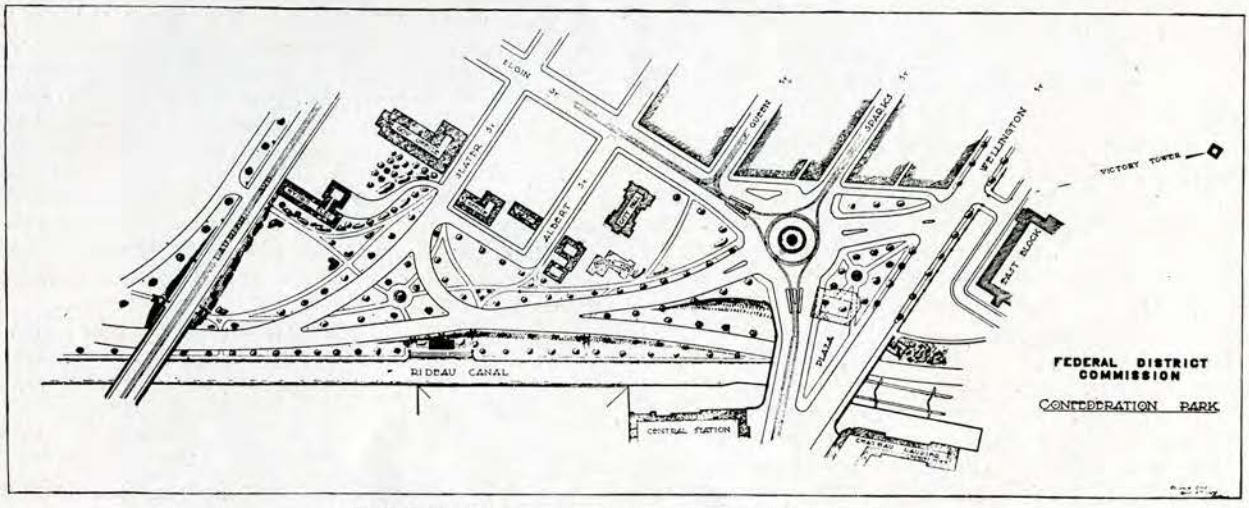
Yours very truly,

S. M. EVELEIGH
Hon. Secretary, Architectural Institute of British Columbia

Proposed Confederation Park and Related Central Area for the City of Ottawa

FOLLOWING the publication of a plan about a year ago for a proposed Confederation Park by the Federal District Commission, Mr. Noulon Cauchon, on behalf of the Town-Planning Commission of the City of Ottawa, submitted an alternative scheme, which met with the approval of the Ottawa Board of Control. As the two schemes submitted were entirely different in character, the Federal Government decided to secure an independent report, and Mr. Henry Sproatt, Architect of Toronto, was appointed by the Government to consider the proposals and submit his recommendations to the Government. Up to the present time Mr. Sproatt's report has not been published, and no official announcement has been made, either by the Federal Town-Planning Commission or the Dominion Government.

Mr. Cauchon's scheme provides not only for Confederation Place, but also for the widening of Elgin Street, and a new entrance to Parliament Hill. According to the report, which was submitted together with his plan, Mr. Cauchon proposes to use Confederation Place as a clearing house for traffic, and as the forum of public and official receptions.



PROPOSED PLAN—FEDERAL DISTRICT COMMISSION

PROPOSED PLAN—CITY OF OTTAWA TOWN PLANNING COMMISSION
Noulon Cauchon, Chairman and Technical Adviser

Activities of the Institute

A MEETING of the executive committee of the council of the Royal Architectural Institute of Canada was held on Thursday, August 22nd, 1929, at 5 o'clock p.m., at "Le Club Canadien," 438 Sherbrooke St. East, Montreal, Que.

Those present were Messrs. Percy E. Nobbs, president; Gordon M. West, hon. treasurer; Ernest Cormier, W. S. Maxwell, Eugène Payette, Philip J. Turner, and Alcide Chaussé, hon. secretary. The president, Mr. Percy E. Nobbs, was in the chair, and Mr. Alcide Chaussé, hon. secretary, acted as secretary, Mr. I. Markus, executive secretary, being absent through sickness.

Reading of the Minutes: The minutes of the meeting of the executive committee of the council held at Montreal, on Wednesday, June 19th, 1929, were read and approved.

Official and Salaried Architects: A letter from Mr. S. M. Eveleigh, of Vancouver, B.C., on the subject of official and salaried architects, was referred to Mr. David R. Brown, convenor of the special committee on this matter.

R.A.I.C. Committee on Examinations: The hon. secretary reported that the executive secretary had on the 5th July, 1929, sent to members of the executive committee a copy of the draft schedule of examinations, as submitted by Prof. Wright to the executive committee on June 19th, 1929. It was resolved that consideration of this matter be postponed until after the new by-laws have been disposed of.

Hospital Planning: A letter dated June 26th, 1929, was read from Mr. B. Evan Parry, to the effect that he had attended the annual convention of the International Hospital Congress at Atlantic City, where he had met Messrs. Edward F. Stevens and Charles Butler, both outstanding architects in hospital work. The convention, he stated, was highly interesting. The next annual meeting of the American Hospital Association will be held in Texas, U.S.A. Mr. Parry advised that he had forwarded an article for THE JOURNAL—R.A.I.C., covering the congress. This communication was referred to the president for his information, when he will communicate with Dr. Bazin, of Montreal, president of the Canadian Medical Association.

Canadian Rome Scholarship: The president read a letter he had sent to the Premier, the Hon. Mackenzie King, in connection with this matter, and reported progress.

Royal Institute of British Architects: The secretary gave communication of the following correspondence received from the Royal Institute of British Architects:

June 25th, 1929—Asking information for incorporation in the coming edition of the "R.I.B.A. Kalendar." This information was sent by the hon. sec.

July 2nd, 1929—Respecting the representatives of the Royal Architectural Institute of Canada on the council of the Royal Institute of British Architects, session 1929-30. The hon. secretary has informed the R.I.B.A. that our representatives were the same as those of last session, *viz.*: Professor Herbert Reilly (Liverpool) and Mr. Percy E. Nobbs, president of the R.A.I.C.

July 4th, 1929—Respecting the Allied Societies' Conference, giving the dates of the regular meetings up to May 12th, 1930.

July 4th, 1929—Respecting the publication of "Isometric Drawing of St. Paul's Cathedral," by Mr. R. B. Brook-Greaves.

July 15th, 1929—Respecting the R.I.B.A. subscriptions and rebates. The president is requested to confer with Mr. J. P. Hynes on this matter, and will write to Allied Societies' Conference suggesting a revised downward subscription fee for overseas members of the R.I.B.A.

Resignation of Mr. R. B. Bunyard: A letter dated August 13th, 1929, from the executive secretary, was read, informing the executive committee that Mr. E. J. Gilbert, secretary of the Saskatchewan Association of Architects, had advised that Mr. Frank P. Martin, of Saskatoon, had been appointed on the council of the Royal Architectural Institute of Canada, in place of Mr. R. G. Bunyard, who recently resigned.

R.A.I.C. Architectural Exhibition: The president suggested that in connection with the coming annual meeting of the Royal Architectural Institute of Canada, that a special committee, composed of officers of the Institute and of the Province of Quebec Association of Architects, be formed for the organization of an architectural exhibition. Mr. Gordon M. West suggested that this committee get in touch with the Toronto Chapter of the Ontario Association of Architects, who could give valuable information in connection with the matter of architectural exhibitions.

"Comité Permanent International des Architectes": A communication was read from the "Comité Permanent International des Architectes" respecting the Canadian section, which is composed of Messrs. John S. Archibald, as member of the "Comité," and Alcide Chaussé, as member of the council of the "Comité."

Fourth Pan-American Congress of Architects: The hon. secretary read the two following communications which he had received from the executive committee of the Fourth Pan-American Congress of Architects:

July 6th, 1929—Informing the R.A.I.C. that the Fourth Pan-American Congress of Architects will be held in the city of Rio de Janeiro, Brazil, from the 19th to the 30th June, 1930; giving the composition of the executive committee of the congress and of the other committees.

July 20th, 1929—Asking that Canada be represented at the Fourth Pan-American Congress and Architectural Exhibition, and that the executive committee had asked the following Canadian architects to be their delegates in the Dominion of Canada: Messrs. Alcide Chaussé and John S. Archibald, of Montreal; Fred L. Townley, of Vancouver; and J. H. G. Russell, of Winnipeg, Manitoba, and asking that the Royal Architectural Institute of Canada choose other Canadian architects to serve as the Canadian delegation of the executive committee of the congress. Canadian architects are invited to attend this congress and to send exhibits for the architectural exhibition.

The name of Mr. Gordon M. West was added to those already chosen by the executive committee of the congress.

The editor of THE JOURNAL, R.A.I.C., was requested to give publicity to this congress and exhibition, and the hon. secretary will advise the executive committee of the congress that the Institute will probably see that individual or collective exhibits are sent for their exhibition.

Resignation of the Clerk of the Montreal Office: The secretary informed the executive committee that Miss Victorine Morin, who had been in the service of the Institute as clerk and assistant to the hon. secretary for the last twenty-two years, had been forced to resign through illness on August 1st, 1929, and that she is to be replaced by Miss Hélène Duchesne, who is also in the service of the Province of Quebec Association of Architects, her salary to be the same as that of Miss Morin.

Trust Fund: It was suggested that the editor of THE JOURNAL, R.A.I.C., be requested to write an editorial respecting the creation of an Institute Trust Fund.

Amendments to Charter: The hon. secretary informed the executive committee that he had received the official copy of the recent amendments to the charter, now known as "An Act respecting The Royal Architectural Institute of Canada" (19-20 Geo. V., chap. 96). Assented to June 14th, 1929. Copies of these amendments, he reported, had been sent to the Provincial associations by the executive secretary.

Revision of the By-laws: The hon. secretary reported that as instructed by the executive committee, he had prepared a tentative draft for the new by-laws, made necessary by the recent amendments to the charter, which by-laws would replace and abrogate the present by-laws of the Royal Architectural Institute of Canada, and be in full conformity with the requirements of the charter and its various amendments.

The proposed new by-laws were considered, clause by clause, and it was resolved that a revised draft, as suggested by the executive committee, be prepared by a committee composed of the president and the hon. secretary, and to report at the coming meeting of the executive committee. The executive secretary is to forward copies of the revised draft of the by-laws to all members of the executive committee a few days before the date of the next meeting of the executive committee.

Vote of Thanks: It was unanimously resolved to offer sincere thanks to "Le Club Canadien" for having given us the privilege of having this meeting in the library of the club.

Adjournment: There being no other matter before the chair, the meeting was consequently adjourned to a date that will be fixed by the president.

Form for Bequest of Legacy
to
The Royal Architectural Institute of Canada

THE attention of the members of the Institute is called to the following legal form of bequest which has been prepared for the use of those who may desire to bequeath to the Institute, certain funds for the creation of scholarships or for the furthering of any of the Institute's activities:

> I GIVE, DEVISE AND BEQUEATH unto the Royal Architectural Institute of Canada, the sum of....., free of succession duties, to be applicable in the discretion of the council of the said Institute for general purposes or for such special purposes as the said council shall determine. (*If the Testator desires to leave legacy for particular purposes, insert after words* "to be" *such purpose as may be desired*). And I direct that the said legacy shall be paid to the president for the time being of the said Institute, whose receipt shall be an effectual and sufficient discharge for the same.

NOTES

A meeting of the executive committee of the Institute was held in Montreal on Thursday, August 22nd, 1929. The members present were the guests of the honorary secretary, Mr. Alcide Chaussé, at a dinner held in the "Le Club Canadien," Montreal.

* * * *

Messrs. Weatherhead & Wall, architects and structural engineers, of Saint John, N.B., announce the removal of their offices from 60 Prince William Street to the Willis Building, 80-82 Prince William Street. They will be glad to receive catalogues and samples from manufacturers of building materials.

* * * *

The Concrete Products Association of Canada tendered a special dinner to the Ontario architects on Thursday evening, August 29th, at the King Edward Hotel, Toronto.

The purpose of the dinner was to give the architects an opportunity of hearing an interesting address delivered by Mr. W. D. M. Allan, of the Portland Cement Association, on the "Three Main Uses of Concrete."

* * * *

Mr. Phillip J. Turner, of Montreal, member of the executive committee of the Institute, will visit Vancouver during the latter part of September. While there he will deliver an illustrated lecture on Liverpool Cathedral and also meet the officers of the Architectural Institute of British Columbia.

Mr. Gordon M. West, of Toronto, honorary treasurer of the Institute, will attend the annual meeting of the Canadian Chamber of Commerce, which will be held in Calgary and Edmonton during September. Mr. West will confer with the officers of the Alberta and Manitoba Associations of Architects while on his visit to the western provinces.

* * * *

Mr. L. B. Husband, architect, of Hamilton, announces the removal of his office from 26 James Street South, Hamilton, Ontario, to Room 404, Birks Building, corner of King and James Streets, Hamilton, Ontario.

* * * *

Diego Rivera, famous Mexican artist, recently awarded the Gold Medal of the American Institute of Architects, has been accused by Governor Terrones Benitez, of Durango, of organizing a movement as head of the communist party to overthrow the government. Rivera has denied the charges and declares that he has not been an active member of the communist party for three months.

* * * *

Messrs. Barott and Blackader, architects, of Montreal, received first award in an architectural competition for a building to be erected for the Bank of Montreal in Ottawa. The assessor for the competition was Mr. Alexander B. Trowbridge, consulting architect, of Washington, D.C.

(*Concluded on page xxx*).

Notes—Concluded

The ashes of Sansovino, the great Italian renaissance architect (1479-1570), were recently removed from the Church of the Salute to the Cathedral of St. Mark, Venice. The ceremony created unusual interest, the procession passing over a bridge built on boats especially for the occasion.

* * * *

The American Institute of Architects lost one of its recent past presidents in the person of Mr. Milton B. Medary, who died on August 7th, 1929, at his home in Philadelphia. Mr. Medary was born in Philadelphia on February 6th, 1874, and after studying at the University of Pennsylvania, commenced the practice of architecture with Mr. Field. For nineteen years prior to his death, he was a member of the firm of Zantzinger Borie & Medary. Mr. Medary served as President of the American Institute of Architects from 1926 to 1928.

* * * *

The Trussed Concrete Steel Company of Canada, Limited, desire to announce that the name of the company has been changed to the Truscon Steel Company of Canada, Limited. No change is being made in the organization. For a number of years this organization has been popularly referred to as "Truscon," so that the new name merely conforms to general practice.

* * * *

The Northern Electric Company has just completed the construction of another branch warehouse in Regina, Saskatchewan. Mr. W. T. Hunt is manager of this branch.

BOOKS REVIEWED

PUBLISHERS' NOTE:—We wish to remind our readers that any books reviewed in these columns, as well as any other Architectural book, can be secured through the Journal of the R.A.I.C., at the published price, carriage and customs duties prepaid.

COLLEGE ARCHITECTURE IN AMERICA—And its part in the development of the Campus. By Charles Z. Klauder and Herbert C. Wise. Published by Charles Scribner's Sons, New York. Price $5.00.

To what extent the student mind at school is affected by its architectural surroundings is a matter for some speculation. I think that all will agree that a mind which has been developed in the midst of good taste is less likely to be satisfied with things which are in bad taste. Whether this ability to discriminate will bring happiness or discontent depends on the individual. Its exact effects we do not know.

We do know, however, that beauty stimulates sentiment, that sentiment is good for the individual because it takes him out of himself. It is also good for a school as it promotes esprit-de-corps and strengthens the support of both the students and the alumni. The advertising value of good architecture is unquestioned, but it has other powers just as important which are not so obvious and are seldom described.

To quote from the authors of "College Architecture in America."

"The affection of the college man for his alma mater has at least one picture sufficing to command his devotion. It is the college scene. Now the college scene is impossible to think of without its setting of architecture. What student sensibility is there unresponsive to the beautiful nave where the daily chapel was held, the stately portico where the class would group itself to be photographed, the window of the study where Caesar was conned under sheltering eave and overlooking roofs and chimneys? And many an old grad has reflected that students may come and go, classes enter and graduate; but that venerable walls and carved chimney-pieces, picturesque gables and vaulted archways endure forever. These remain his own because always present in his mind's eye and he prays that change and decay may never reach them.

(*Concluded on page xxxii*).

Books Reviewed—Concluded

"It is with this physical aspect of the college or university that we are to deal. By the telling effects of the architectural setting is the graphic portrayal of the institution made possible. This portrayal centres attention upon and soon comes to symbolize the institution, for however beautiful a natural scene, landscape alone can not identify itself until architecture enters and completes the pictorial quality."

The authors of this book have not intended it as a treatise on architectural design but rather as a "body of suggestion to institutions contemplating physical improvement." While the importance of good architecture is presented completely and convincingly, the book is really a comprehensive text book on the problems connected with the building up of a school or university plant. Over seventy institutions were personally visited by the authors to supplement their thirty years' experience in designing college buildings.

The information thus accumulated is systematically tabulated and the arguments for and against certain types of planning are convincing. One of the most interesting chapters is that dealing with general development plans. How few of our Canadian schools or university groups have followed any definite plan or have even sought expert advice as to how their future buildings should be designed or placed. Each new building as it is required is turned over to this or that architect who is only allowed to consider it on its merits alone without regard to existing buildings or future expansion.

Among the other chapters, the various buildings which go to make an educational group are dealt with very completely. Administration buildings, libraries, chapels, men's and women's dormitories, dining halls, science, engineering and central heating plants, art buildings, athletics and student and faculty welfare all have chapters devoted to them.

It is a book which should be of great use to any architect who has a college problem on his hands. What is more important to my mind, it should be in the library of the chief executive of every school and university in the country. For, unless those who control our schools and universities realize that there is this problem and really desire beauty and orderliness in the arrangement of their buildings and grounds, the architectural profession will be powerless to help.

There are, we know, many institutions in this country, and the number is steadily growing where the building program has been very intelligently handled. There are many more, however, where a great opportunity has been missed through the apathy or lack of knowledge of a school or university authority.

Architects themselves are far from blameless in this regard, but there are poor architects just as much as poor lawyers or business men. Books like this must impress those who read them with the necessity for great care and good judgment in working out so important a factor in the destiny of their institution. —F. H. MARANI.

OBITUARY

We regret to note the passing of Mr. Samuel Maclure, of Victoria, B.C., one of the best-known architects in British Columbia. After some weeks in the hospital, Mr. Maclure underwent an operation, but failed to rally, and died on August 8th, 1929.

Mr. Maclure was born in New Westminster sixty-nine years ago, and was a son of the late Mr. John Maclure, a civil engineer, of Scottish extraction, and one of the earliest settlers in the colony. At the age of twenty Mr. Maclure went to Philadelphia to study architecture, and upon his return to New Westminster opened an office for the practise of architecture. In his thirty-five years of practice he has designed some of the finest residential properties in Victoria, and in Vancouver. His work was such that he commanded the highest regard from his confreres.

Mr. Maclure is survived by his widow and three daughters. It is the intention of Mrs. Maclure to continue the professional connection of her husband.

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3. La Fontaine Apartments, Quebec.
   Architects: Robitaille & Desmeules.
4. Dunham Building, Chicago.
   Architects: Burnham Bros.
5. Baltimore Trust Building, Baltimore.
   Associated Architects: Taylor & Fisher and Smith & May.
6. Marlborough House, Seattle.
   Architect: Earl Morrison.
7. First National Bank Building, Philadelphia.
   Architects: Ritter & Shay.
8. Carbide & Carbon Building, Chicago.
   Architects: Burnham Bros.
9. Milwaukee County General Hospital, Wawautosa, Wis.
   Associated Architects: Van Ryn & DeGellecke, Milwaukee; Armstrong & DeGellecke, New York.
10. Marshall Field Garden Court Apartments, Chicago.
    Architect: Andrew J. Thomas, New York City. Associated Architects: Graham, Anderson, Probst & White, Chicago.
11. Toronto Star Building, Toronto.
    Architect: Chapman & Oxley.
12. Gulf Building, Houston.
    Architect: Alfred C. Finn, Houston. Consulting Architects: Kenneth Franzheim and J. E. R. Carpenter, New York.
13. Pigott Building, Hamilton, Ont.
    Architects: Bernard H. Prack and F. Prack.
14. Grant Building, Pittsburgh.
    Architect: H. Hornbostel. Associated Architects: Eric Fisher Wood & Co.
15. Battle Creek Sanitarium, Battle Creek, Mich.
    Architect: Merritt J. Morehouse, Chicago.

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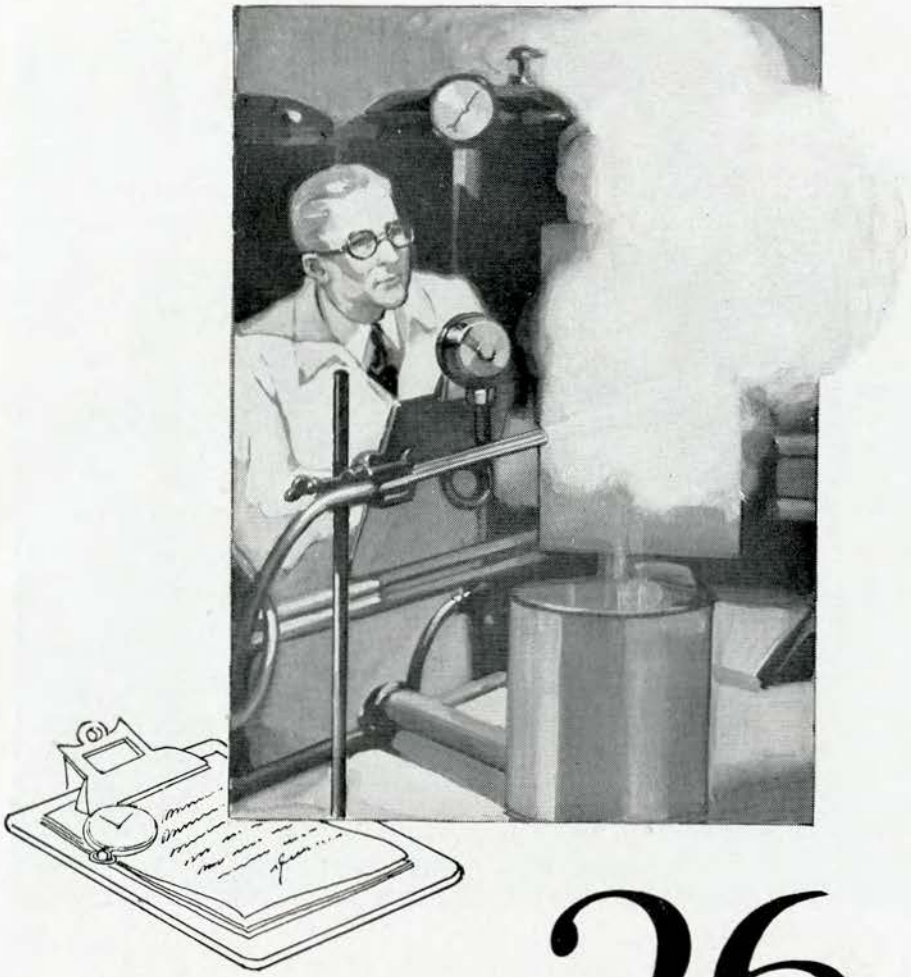

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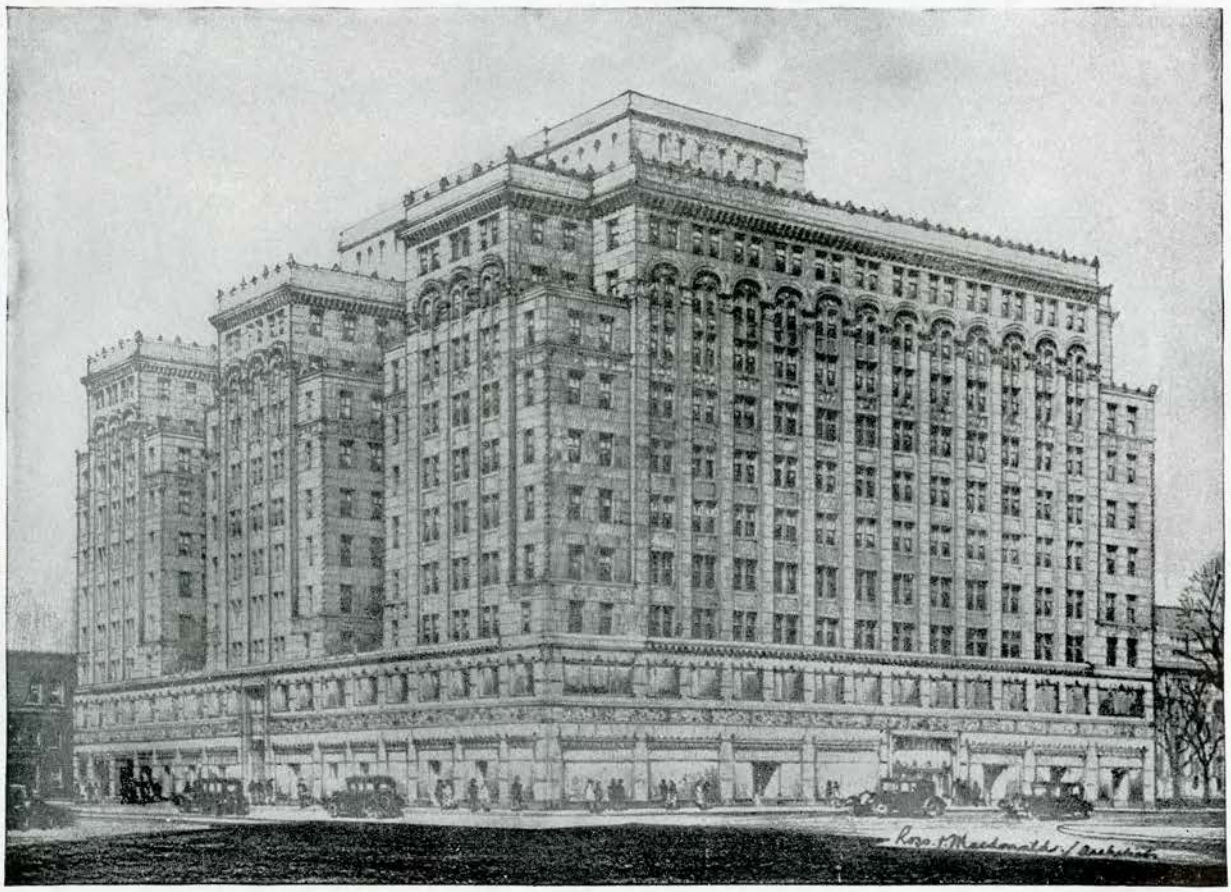

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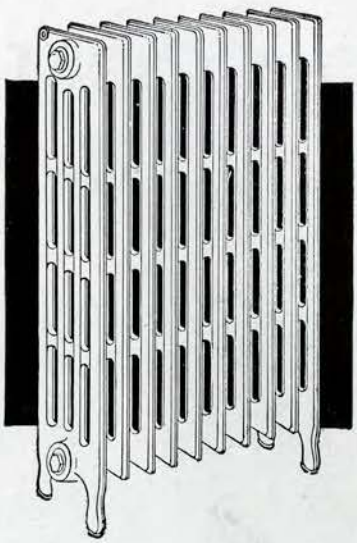

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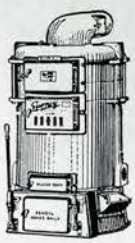

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NEW ARCHITECTURAL BOOKS

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By Gerald K. Geerlings **$7.50**

This volume is uniform in format with the "Metal Crafts in Architecture" by the same author. It contains a practical discussion on craftsmanship as it relates to wrought iron. The chapters in the book deal separately with iron work of Italy, Spain, France, The Lombards, England, Germany, American pre-twentieth century, and the Modern. The final chapter is given over to specifications.

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By Charles Z. Klauder and Herbert C. Wise **$5.00**

This book is the outcome of a joint endeavor by the Association of American Colleges and the Carnegie Corporation to contribute something worth while in the field of college architecture and college planning. The illustrations, carefully selected, include interesting details as well as treatment of problems in grouping and planning. Valuable hints and tables, the result of many years' practical experiences are given, and cover such important details as proper exposure, utilization of space, detailed requirements in special buildings and laboratories. The following are among the chapter headings: Administration and Academic Buildings, Libraries, Chapels and Auditoriums, Men's and Women's Dormitories, Dining-Halls and Cafeterias, Buildings for the Natural Sciences, Engineering Buildings and Central Heating Plants, Art Buildings and Museums, Structures for Athletics, Buildings for Student Welfare. 215 illustrations. 7½ x 10 inches.

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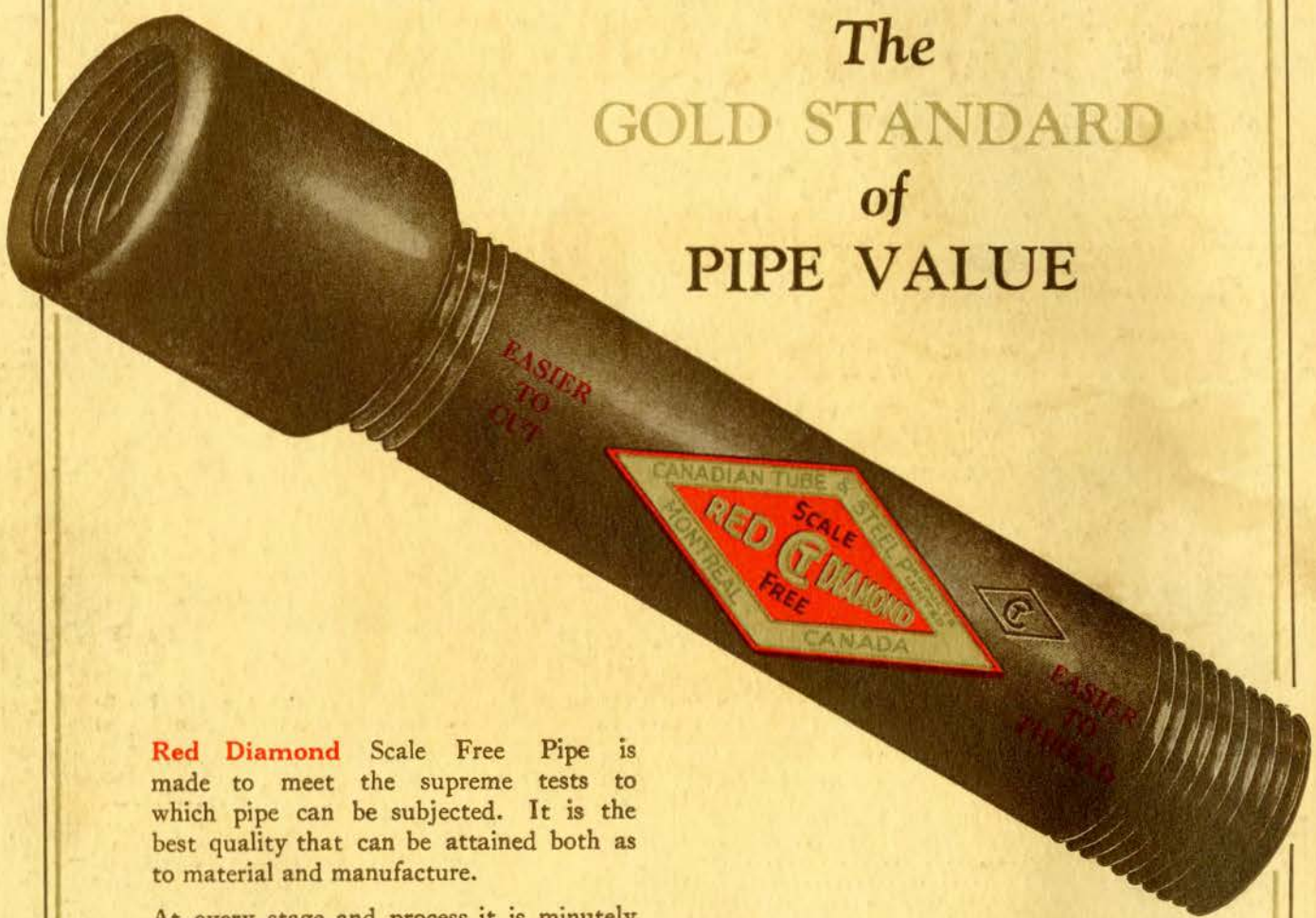

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