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PROGRAM

of the Exercises at

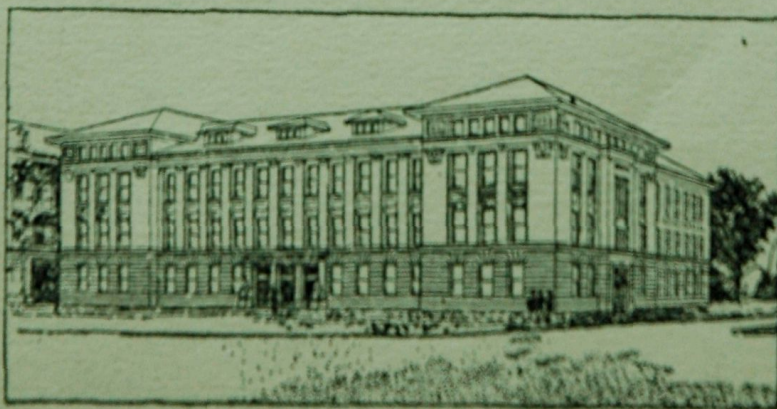
THE DEDICATION

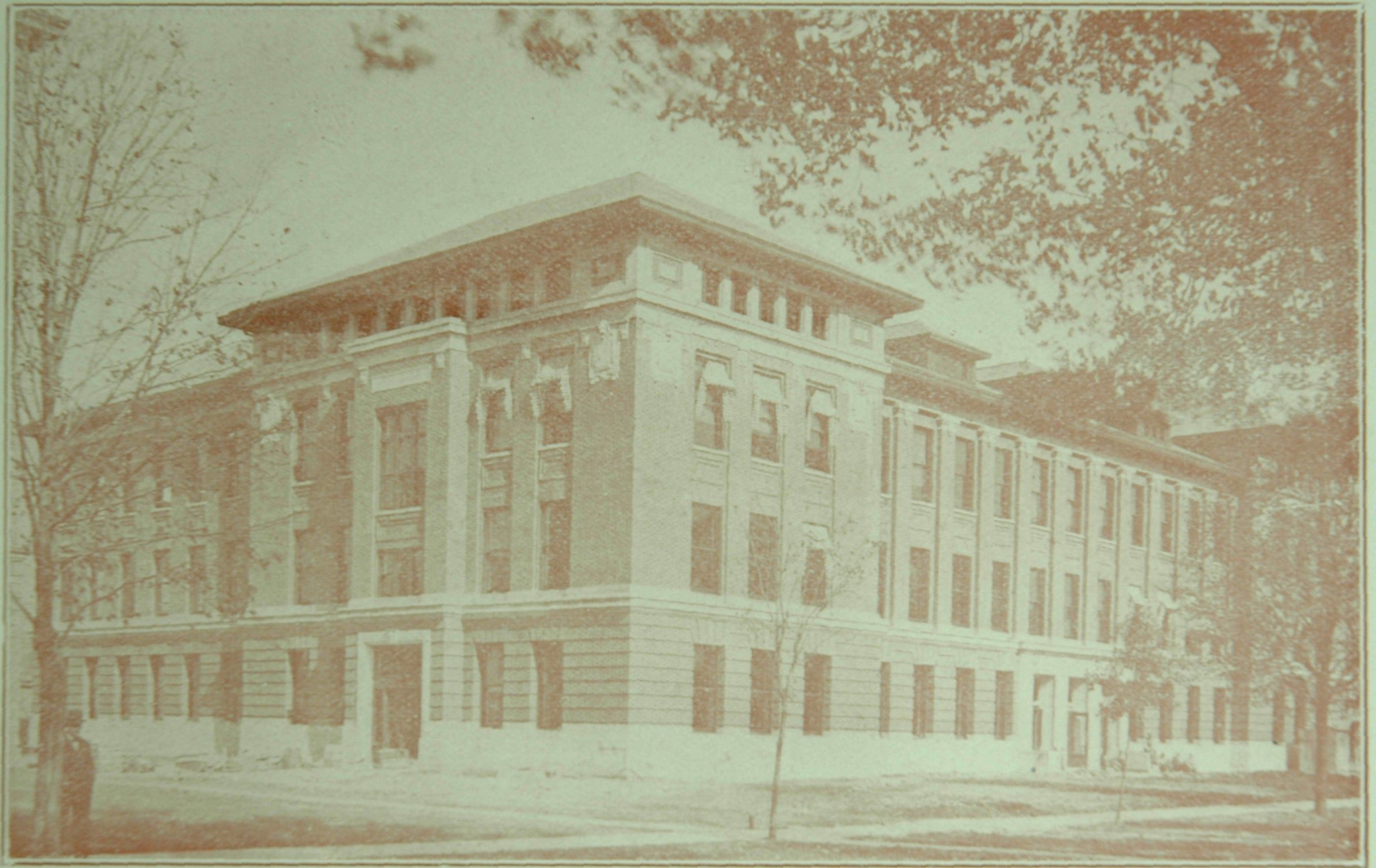
of the

LABORATORY OF PHYSICS

November 26, 1909

With a Description of the Building





LABORATORY OF PHYSICS

PROGRAM

FRIDAY, November 26, 1909.

2 p. m. Physics Lecture Room, President James
Presiding.

Presentation of Building with Address by
the Honorable Charles S. Deneen,
Governor of Illinois.

Acceptance by the Honorable William L.
Abbott,
President of Board of Trustees.

Charge to the Department of Physics by
President Edmund J. James.

Response by Albert P. Carman, Professor of
Physics.

Address, "The Administration of a Depart-
ment of Physics" by President Henry S.
Pritchett of the Carnegie Foundation for
the Advancement of Teaching.

4 p. m. Inspection of the Building.

FRIDAY, November 26, 1909.

8 p. m. Physics Lecture Room, Dean W. F. M. Goss
Presiding.

The American Physical Society and the
Illinois Academy of Science, special
guests at this meeting.

Address in behalf of Graduate Work by
Prof. David Kinley, Dean of the Gradu-
ate School.

Address, "Scientific Faith and Works" by
Prof. Arthur G. Webster of Clark Uni-
versity, Past-President of the American
Physical Society.

An informal social gathering for guests at
the University Club after the addresses.

SATURDAY, November 27, 1909.

9 a. m. Physics Lecture Room, Prof. Henry Crew,
President of the American Physical So-
ciety Presiding.

Regular scientific meeting of the American
Physical Society.

12:30 p. m. Luncheon for guests at University Club.

PROFESSOR A. G. WEBSTER'S LECTURES.

November 29 to December 1.

PUBLIC LECTURES

Monday, 7:30 p. m. "Great Physical Problems of the Past, Present and Future."

With Sigma Xi as special guests.

Tuesday, 7:30 p. m. "Sound and Its Measurement."

Wednesday, 4 p. m. "The Gyroscope and Its Practical Applications."

SPECIAL LECTURES.

(For students in Physics and Mathematics, and others interested).

Monday 10 a. m. "Classification of Mathematical Physics with reference to Mathematics."

Tuesday, 10 a. m. "Waves, Ether and Relativity."

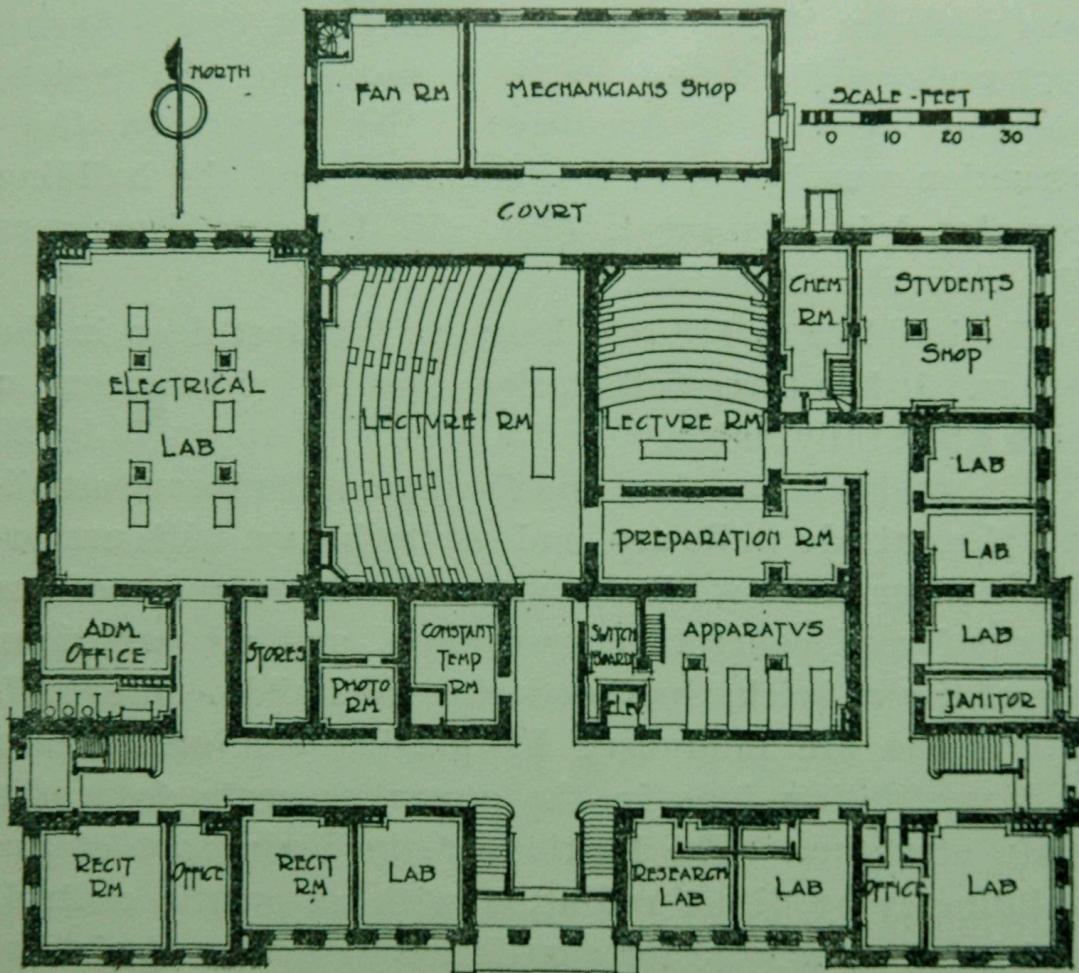
DESCRIPTION OF BUILDING

The Laboratory of Physics was built and equipped with an appropriation of \$250,000 voted by the Illinois Legislature in May, 1907. The design of the building was made by Mr. W. Carbys Zimmerman, State Architect, under directions from the Department of Physics, and the Supervising Architect of the University. Construction was begun in August, 1908, and the building completed in November, 1909. V. Jobst & Sons were the general contractors.

The building is 178 feet long and 125 feet deep in the wings. It has three full stories, a cemented basement, a high attic fully finished, and a one-story annex 70 by 28 feet, containing the shop and fan rooms. To insure stability, the outside walls are made extra heavy, with numerous interior cross walls of brick. The floors and roof are of reinforced concrete construction, and all partitions are of tile or brick, thus rendering the building fireproof. Vibrations are minimized by placing shop machinery and ventilating fans in the annex separate from the main structure. The heating of the main part of the building is by direct radiation with automatic control, and is supplemented for ventilation by tempered air distributed by fans. Steam is brought from the University boiler house. The lecture rooms are heated wholly by hot air distributed by fans.

Linoleum covers the floor of the corridors, except for the hard wood margin, so that noise is lessened, and cleaning made easier. Cleaning is done by the vacuum cleaning system so as to decrease dust.

The laboratory is designed to provide for the instruction of large classes in important undergraduate courses and also for the work of advanced students both as to instruction and investigation. It is desirable that the advanced work be removed from the noise and confusion caused by the large classes of undergraduates. For this



LABORATORY OF PHYSICS—FIRST FLOOR

reason the recitation rooms and large laboratories are confined to the west wing of the building, thus leaving the east wing free for the advanced work. The floor plans show this arrangement.

Two features in the general design of the building have received special study,—namely, the facilities for

storing apparatus and the situation of the large lecture rooms. A commodious tier of stacks, similar to library stacks, is located in the center of the building and equipped with cases for storing apparatus. The apparatus shelves are 2 1-2 feet wide and have an estimated total length of 1200 feet. An elevator running through these stacks allows apparatus to be moved easily to any part of the building. The elevator is of the direct lift plunger type, thus securing safety, and also doing away with rotating power machinery. It runs from the unpacking room in the basement to the attic floor, with landings on the main corridor of each floor, and also on all floors and mezzanine floors of the apparatus stacks. Heavy rubber tired trucks are used in transferring apparatus by the elevator.

The general lecture rooms are on the ground floor between the wings of the building and are one and one-half stories high. Light comes wholly from overhead, so that the rooms may be darkened by horizontal curtains operated by water power from the lecture room desk. Heating and ventilation are cared for by a system of hot air operated by a ventilating fan,—this fan with its ducts being entirely separate from the fan and ducts for the rest of the building.

Both lecture rooms are connected with the preparation room, and the latter in turn with the apparatus stacks. The lecture rooms are designed to hold 262 and 115 students, respectively.

The Electrical Measurement Laboratory is completely equipped to care for work in electricity and magnetism. Direct and alternating currents of different ranges find outlets in this room. The equipment includes a large

selection of Hartmann and Braun's best grade resistance boxes, Wolff, Hartmann, and Crompton potentiometers, about 50 galvanometers of different sensibilities and types, certificated condensers, etc., etc. Stability is secured by six large piers built up from the ground and separated from the floor of the laboratory. Heavy maple wall benches also furnish suitable supports for delicate apparatus.

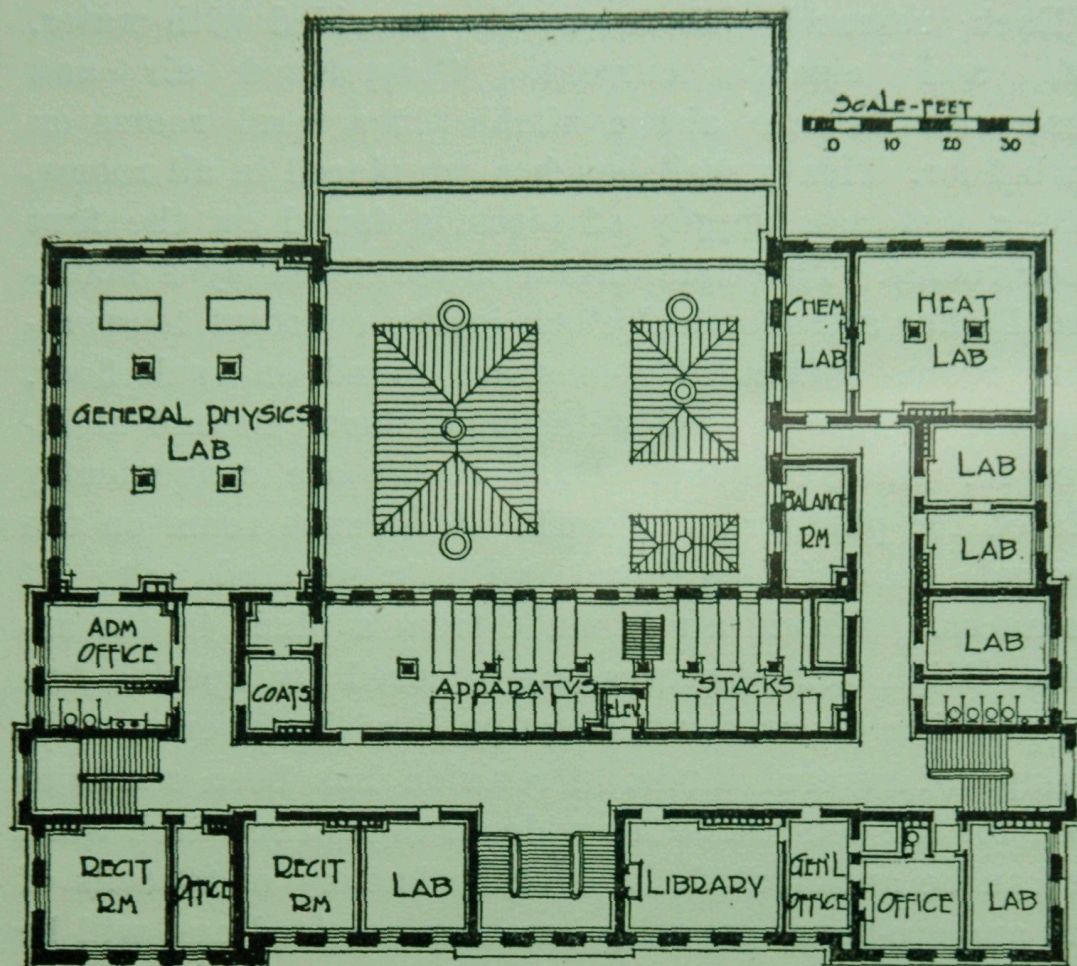
Two shops are on the first floor. The mechanician's shop is in the annex and is a room 52 by 25 feet in size, lighted from the north. The shop is provided with a Browne and Sharp milling machine, Hendey-Norton lathe, drill press, etc., driven from shafting by an electric motor. There is also a complete outfit of bench tools.

The students' shop is for the use of advanced students and instructors. It is supplied with lathes, bench tools, etc. The floor of this shop is a large, reinforced concrete slab, floated on a sand and gravel foundation. It is thus separated from the walls of the building, so that vibrations of the machinery may not be communicated to the research rooms.

The second floor accommodates the laboratory in general physics for students in the sciences and arts. The heat laboratory, which is on this floor, is equipped with apparatus and facilities to care for the demand for measurements of high and low temperatures. This apparatus includes pyrometers, furnaces, and a set of thermometers of various ranges calibrated at the Reichsanstalt. Provision is also made to care for the usual experiments that present themselves in advanced heat courses.

Each research laboratory is provided with water, gas and electric current. Compressed air and time circuits are also available in several rooms on each floor. Heavy wall benches are placed in all rooms, and a generous supply of piers is found on the first floor rooms. The time circuit is furnished by a standard Riefler astronomical clock in the constant temperature room. Chemical rooms are found on each floor, and are to be equipped with hood, chemicals and facilities for glass blowing. Dark rooms are conveniently placed for photographic work. A balance room on the second floor is equipped with a selected set of balances. Liquid air is made from a plant in the annex. High temperatures are secured by special furnaces. The department is equipped with power vacuum pumps of several kinds. Provision has been made to care for the demands of as wide a range of research work as can be anticipated. A storage battery of 80 cells of 320 ampere-hours capacity has been received and will be installed in addition to an older battery of 40 cells. A large choice of currents will be secured by the installation of these storage batteries, together with a motor generator set, and the usual lighting circuits. The main switchboard is 12.5 x 6 feet in size. It is for the experimental circuits, and is entirely separate from the lighting and power circuits. It is designed so that any current is available in any laboratory or research room in the building. Every laboratory is connected with this switchboard by at least two independent circuits of ample carrying capacity.

The department is fortunate in its equipment. Generous appropriations for a number of years have been



LABORATORY OF PHYSICS—SECOND FLOOR

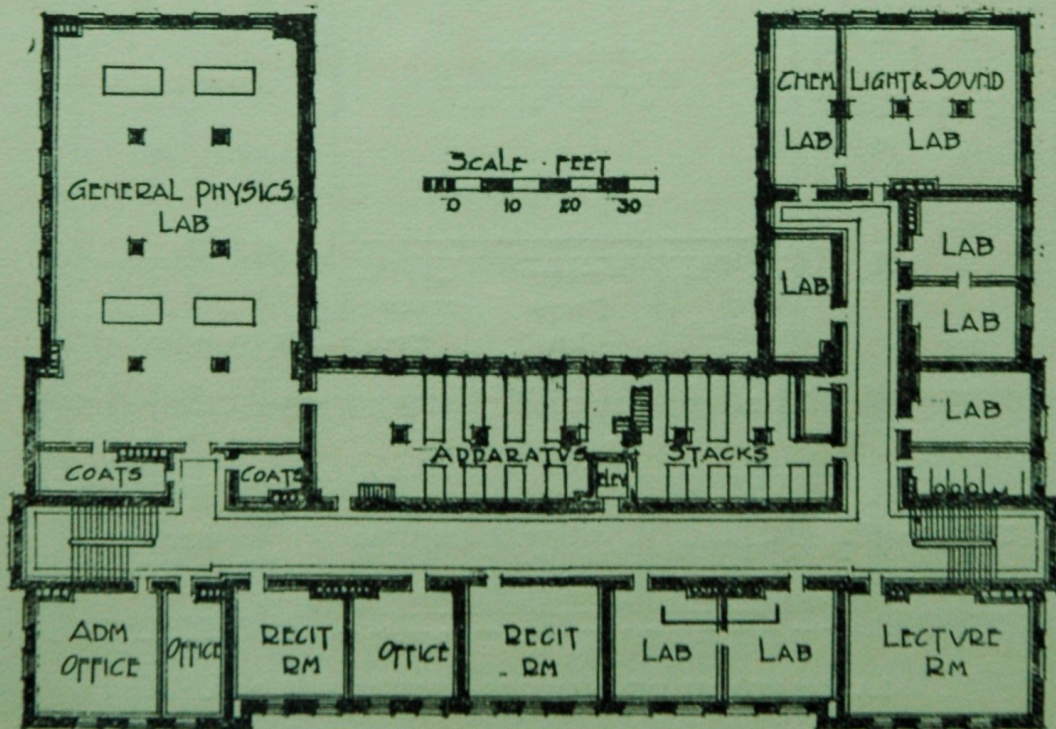
used to purchase apparatus that has been needed in elementary laboratory courses and in the advanced work that has been in progress, and only a small amount of the apparatus is antiquated. Experience has shown that new investigations can usually be started with apparatus already on hand. Large additions to the present equipment will be made during the next year from funds now available.

The Library room is 19 x 27 feet, and is finely lighted by south windows. Book-cases built around the walls contain sets of the leading journals of physics for twenty years back. There are found also reference books in

physics, mathematics, and chemistry; and general encyclopædias and dictionaries. Separate steam connections allow this room to be warmed when the heat is cut off from the rest of the building. A fireplace adds to the comfort of the room on dull days.

In accordance with the general plan the east wing of the third floor is used for research work. In addition to the small laboratories, there is found the special laboratory for work in sound and light. Provision is to be made so that the sunlight may be reflected from the front of the building (south exposure) through the small lecture room and corridor to the light laboratory. This laboratory is also adapted for investigations in acoustics.

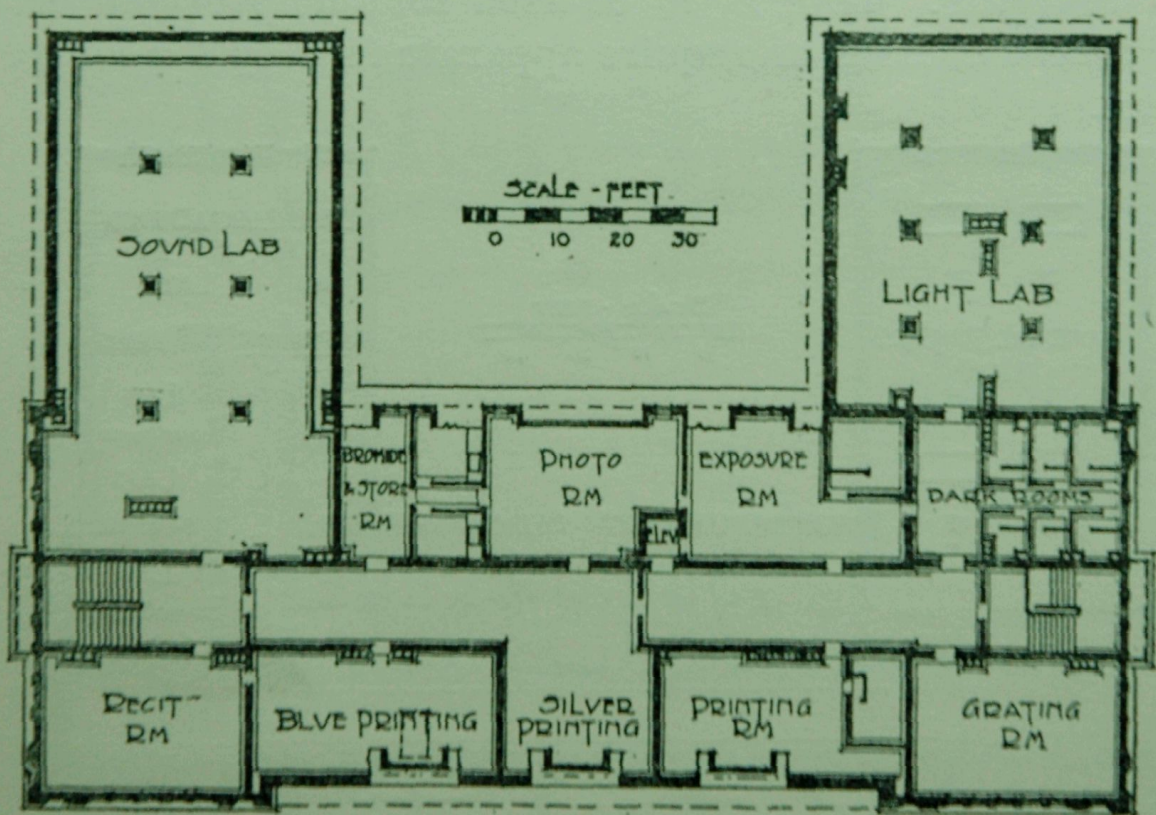
A small lecture room seating sixty people is located in this wing. This is to be used for such lectures in advanced courses as require apparatus set up for some time.



LABORATORY OF PHYSICS—THIRD FLOOR

The west wing of the third floor is used for undergraduate courses. A large laboratory for work in general physics is located in this wing, and has a separate equipment of apparatus and facilities. Owing to the large number of students working in this laboratory, it has been necessary to duplicate many times the original equipment.

The fourth floor, because of its excellent facilities for getting light, is used mainly for work in photography and optics. The room at the west end, because of its large volume and great length, is especially suited for investigations in sound. The room at the opposite end is designed for work in light. Sunlight is brought into this room through the grating room and corridor.



LABORATORY OF PHYSICS—FOURTH FLOOR