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THE TECHNOLOGY REVIEW

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MONTHLY NUMBER

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ANNUAL BANQUET

The Annual Banquet of the Alumni Association will be held at the Hotel Somerset, Boston,

SATURDAY, JANUARY 10, 1914,

AT SEVEN P. M.

SPEAKERS

RICHARD C. MACLAURIN	President of the Massachusetts Institute of Technology
DAVID I. WALSH	Governor of Massachusetts
W. CAMERON FORBES	Ex-Governor-General of the Philippines
JASPER WHITING, '89	President-elect of the Alumni Association

All Technology Get-Together

at Chicago, February 20 and 21, 1914

on the occasion of

Second Annual Convention

of the

Technology Clubs Associated

Program: The Time of Your Life!

The Technology Review

Vol. XV DECEMBER, 1913 No. 9

PREPARING FOR THE FOUNDATIONS

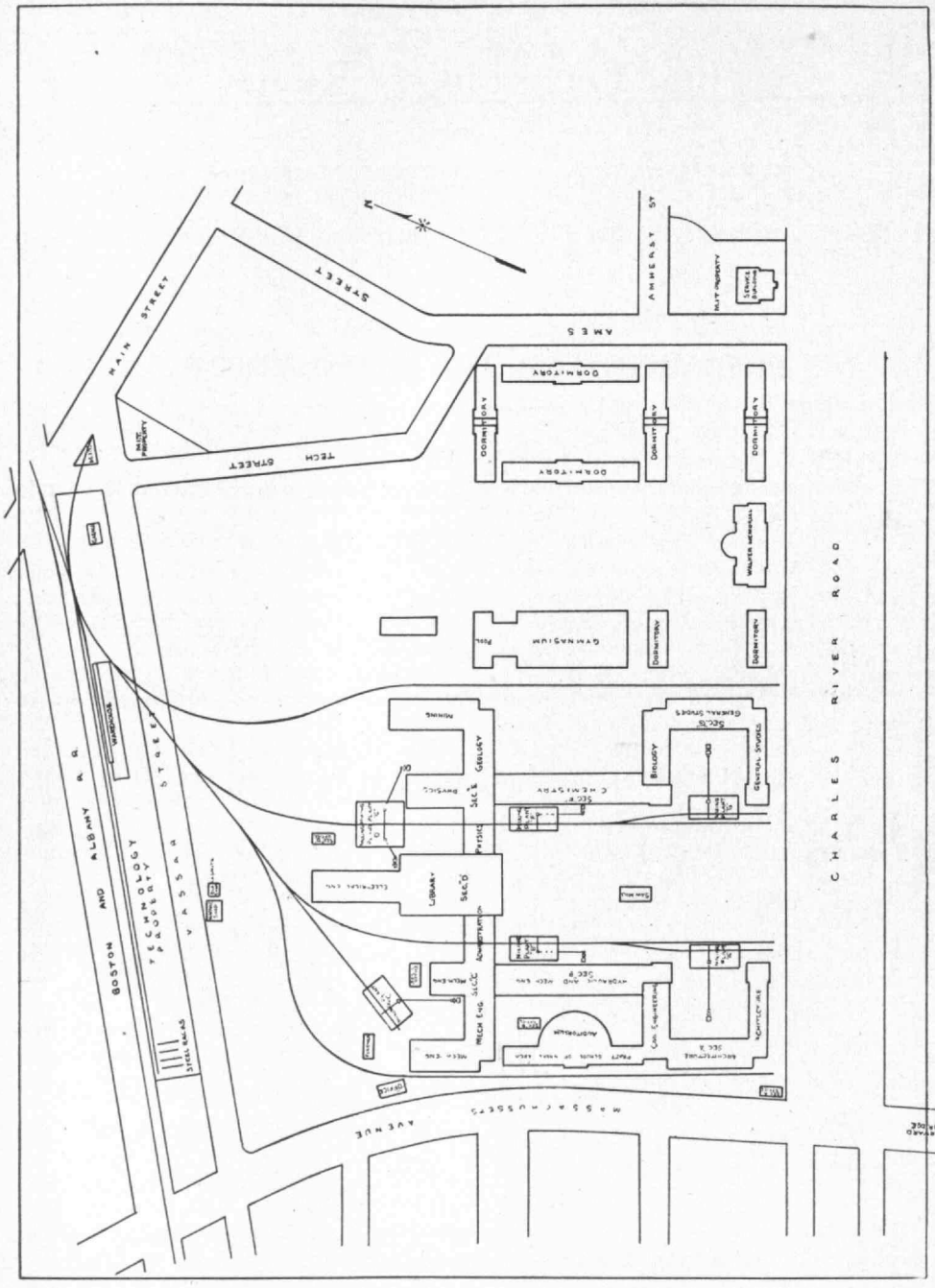
All preliminary work on the new site is completed and everything is ready for active building operations—Fourteen thousand carloads of material to go into the new buildings

Those who have not viewed the new Institute site in Cambridge for two or three months would not recognize it if they should see it now. Great excavations mark the eastern side of the lot with the full pattern of the educational buildings, and here the filling has been practically completed, bringing the main court high above the level of the river. The other side of the tract is not yet completely filled, but at the present rate it will soon be up to grade.

The Stone & Webster Engineering Corporation, who have charge of the work, have been looking ahead and preparing to handle this immense enterprise in the most efficient and expeditious way when the work is in full swing. The most important preliminary has been testing the ground upon which the foundations of the great buildings are to rest. Prof. W. O. Crosby, '76, early made a thorough investigation of the bearing qualities of the soil and the substrata over the entire site. His reports show that bed rock may be found at depths from 120 to 135 feet below the surface, but that a great thickness of gravel and sand, of excellent bearing quality, covers the area beneath the proposed buildings at a depth of ten to twenty feet. It was the opinion of Prof. Crosby that satisfactory bearings can be obtained upon the gravel stratum, and that no attempt should be made to pierce it. It can be reached either by excavation, the footings being placed directly upon it, or by piling driven to its bearing surface.

The engineering force has devoted much attention to the matter of piling. A great number of experiments have been made, among them have been tests of concrete piles, both of the Raymond and the Simplex types. Much study has also been given to typical sections in order to determine the most practical and economical plan of framing; also to the proper proportion of loads on the footings, to the detailing of standard members, wherever possible, and to the details of the sub-surface formation over which the building foundations are to be constructed.

The problem of handling some 14,000 carloads of building material on a restricted area, such as this one, has been carefully studied by the engineers. The incoming material will be taken, for the most part, directly from the train by a switch engine detailed for the purpose, and delivered at the point where it is to be used, over one of the five spur tracks parallel with the main axis of



PLAN OF TECHNOLOGY SITE SHOWING SPUR TRACKS

the lot. Some of the material will be stored in a large storehouse located at the rear of the plant next to the railroad track. The steel for the reënforced concrete construction will be unloaded from the car directly to special bins, where there are also shears and benders for cutting and shaping the rods.

In order to facilitate the handling of the construction, the work has been divided into eight units, each having a complete organization, including a superintendent, a division office, storehouse, time keepers, engineers and laborers. Each of these eight units will have its own separate construction equipment, the units being as nearly alike as possible. It is expected that by keeping comparative records of the cost of each division, a spirit of rivalry will be engendered, which will have the effect of reducing cost and time, especially as the figures will be available twenty-four hours after the actual completion of each day's work. Each division has a specific section of the work to handle; each will have its own mixing plants, with storage bins and concrete hoist towers, which will be located at the strategic points of the building. The towers are 110 feet high, and each tower has a radius of action of about 250 feet.

The driving of the piles was begun on the 4th day of December. It is interesting to note that the plant will require a lumber yard and saw mill, which is being set up near the esplanade. It will be mainly used in fitting forms for the concrete work, and fifty or sixty men will be employed here. There will also be planers, jointers, boring machines and other conveniences for pushing the work. There is also a machine shop and a blacksmith's shop at the rear of the lot on Vassar Street.

There are two other features of the organization which are interesting—the fire equipment and the first-aid room. This last is in a section of the large storehouse, where a room has been fitted up with hot and cold water and simple medical and surgical appliances. A young man here with medical knowledge is ready to answer emergency calls at any time. There is a stretcher at every section headquarters, as well as a telephone which is connected with the large local system on the plant. The apparatus for fire protection consists of a water main laid along the storage warehouse on Vassar street. This main has five hydrants which are provided with standard fire hose.

Among the interesting figures connected with the new buildings are the following: The educational group will have 15,000,000 cubic feet of contents, and a floor area of 890,000 square feet. Its foundations will be built upon 20,000 piles, which, if laid end to end, would extend nearly a hundred miles; 50,000 cubic yards of concrete will be used in the foundations and the reënforced concrete frame. This concrete will be made from 80,000 barrels of cement, 25,000 cubic yards of sand and 50,000 cubic yards of gravel, and 5,000 tons of reënforced steel.

The principal elevations will be faced with Bedford limestone blocks requiring approximately 200,000 cubic feet of stone, and the inside courts, the curtain and division walls, will be faced with some 15,000,000 light-face brick. There will be 1,500,000 feet of lumber used for concrete forms.

Meeting of the Council

At the meeting of the Alumni Council held at the University Club November 17, two matters of great interest were presented by members of the Faculty. Professor Pender, director of the division of electrical research told about the new department, the work it has already done, and some of the things it expects to do in the future. An article on the new division of electrical research was published in the last number of the TECHNOLOGY REVIEW. Professor Miller described a number of interesting features of the work of the mechanical engineering department, giving full description of matters which were of great interest to the members of the Council. An article on the advances made in this department will appear in an early number of the REVIEW.

LOOKING TOWARD BOSTON FROM THE NEW SITE

A RECENT BIT OF HISTORY

How the Campaign for a Building Fund started only a little More than Four Years Ago

It was just about four years ago that the Institute, desperately in need of more room to accommodate its students, made a modest plea for funds with which to build a new home. In the light of the generous benefactions since received, this bit of publicity is interesting, and we therefore append it:—

'The Massachusetts Institute of Technology, which for the past two or three years has been embarrassed for room to meet its growing needs, has definitely decided to start a movement to secure a new site and new buildings immediately.'

"This statement was made by the new President, Dr. Richard C. Maclaurin, and by Mr. Edwin S. Webster, president of the Alumni Association, at the Technology reunion banquet this week. The need for more room has become so pressing that the present quarters will hardly suffice until new buildings are erected, which can hardly be accomplished in less than five years even if building operations are begun at once.

"The Institute wishes to secure a suitable site in a less congested district than the present location, and, at the same time, so centrally located as to be easily accessible from all parts of greater Boston. There are five sites answering this description, any one of which would be desirable. The amount of land needed is from thirty to forty acres, which would probably allow sufficient room for expansion for at least fifty years.

"The character of the buildings will be largely determined by the amount of money secured. It is hoped, however, that the funds will be contributed so generously that the Institute can erect a group of buildings which will exemplify the highest ideals of present-day architecture, and which will be one of the ornamental features of the city. It is understood that an appeal will be made for funds to friends who are in sympathy with the work of the Institute, as the alumni body is not yet able to contribute the money necessary for its logical development.

"The somewhat startling statement is made that one half the graduates have left the Institute since 1898, and that three quarters of them have been graduated inside of thirteen years, so that the majority of them are not yet in a position to contribute any considerable proportion of the amount required. That the alumni body, however, has a considerable financial ability and a strong spirit of loyalty, is shown by the fact that there is now on deposit about $125,000, which was contributed by the alumni about seven years ago for a memorial building to President Walker, to be erected as soon as a site had been secured; and the further fact that the alumni are now contributing $40,000 a year for the current expenses of the Institute. It is interesting to note that this money is being given by 1700 contributors. It is also to be said that the funds thus far subscribed toward a new site, which amounts to about $150,000 comes exclusively from Technology men.

"The Institute is now in a position of permanency, having recently installed a new President and adopted a definite policy. It has sent out over four thousand graduates,—among whom are some of our most prominent engineers and scientists. The state and community have been greatly benefited by the investigations of its instructing staff, which has been, to a great extent, devoted to the advancement of industrial processes and conditions in New England. It is the pioneer in developing new methods of education principally along scientific and technical lines, which have been

generally adopted, not only in other technical institutions, but in the science departments of the academic colleges.

"The executive officers and the alumni are coöperating in this movement to secure funds for new buildings, which shall be available at the time of the 50th anniversary of the Institute which occurs in about six years."

A Jubilee Banquet

The annual banquet of the Alumni Association which will be held at the Hotel Somerset, Boston, January 10, will naturally be in the nature of a jubilee; for since the last meeting large additional gifts have been received, an architect has been appointed, the plans have been approved, the construction engineers have been appointed, and work is now being pushed with great vigor by Stone & Webster, the engineers.

Among the speakers will be President Maclaurin, who will probably devote himself principally to the new buildings. The President's remarks will be illustrated by slides showing the new Technology group as it will appear. The new governor of the Commonwealth of Massachusetts, David I. Walsh, has accepted an invitation to be present and to speak as a member of the Corporation of the Institute. This will be one of Governor Walsh's first public appearances as governor. Another speaker will be Mr. W. Cameron Forbes, late governor of the Philippines, who was recently so warmly welcomed upon his return to America by the City Club. Jasper Whiting, '89, president-elect of the association will be introduced.

Technique Sets a Precedent

The profits of *Technique*, 1914, were disposed of at a meeting of the board last month. The total amount was about eleven hundred dollars, more than has ever been cleared by any *Technique* before.

The books were sold at about the average of former *Techniques*, so the board attributes the large profit to the fact that more advertisements than usual were sold. The 1914 *Technique* contained advertisements worth $700 more than those in the 1913 *Technique*.

The board has turned $750 over to the Institute committee, without restriction or condition. The remaining money is put into a fund started by *Technique*, 1912, which will be used to purchase furniture for the *Technique* office in the Walker Memorial Building of the New Institute.

Articles by Cleveland Tech Men

The Cleveland Engineering Society has been very active during the past year, and a large number of the papers presented by its members have been widely published. Among them was an article on "Railroad Engineering" by A. W. Johnson, '73, general manager of the New York, Cincinnati & St. Louis, R. R.; a paper on "Mining Engineering" by Frank B. Richards, '84, of M. A. Hanna & Company, and a paper on "Sanitary Engineering" by R. Winthrop Pratt, '98, city sanitary expert of Cleveland. The articles written by the members of the Cleveland Engineering Society have had principally for their object instruction of young men about to choose a profession, and the efforts of the publicity committee of the society have been very successful in giving useful information a wide circulation.

Death of Professor Longfellow

William Pitt Preble Longfellow, nephew of Henry W. Longfellow, and at one time professor in the architectural department at the Institute, died at his home in East Gloucester in August. After being graduated from Harvard with the class of 1855, Prof. Longfellow took up architecture and was assistant architect of the Treasury Department for several years. He then came to Technology and afterwards, giving up architectural work, he devoted his attention to literature.

He was the author of "Abstracts of Lectures on Perspectives," "Encyclopedia of Architecture in Italy, Greece and the Levant," the "Column and the Arch" a series of architectural essays, "Applied Perspective," "The Greek Vase," and a "Dictionary of Architecture."

SUMMER SURVEYING CAMP—SEASON OF 1913

Record of a Successful Season—Baseball and Athletic Field presented by C. W. Eaton, '85—The Post Office is "Technology, Maine"

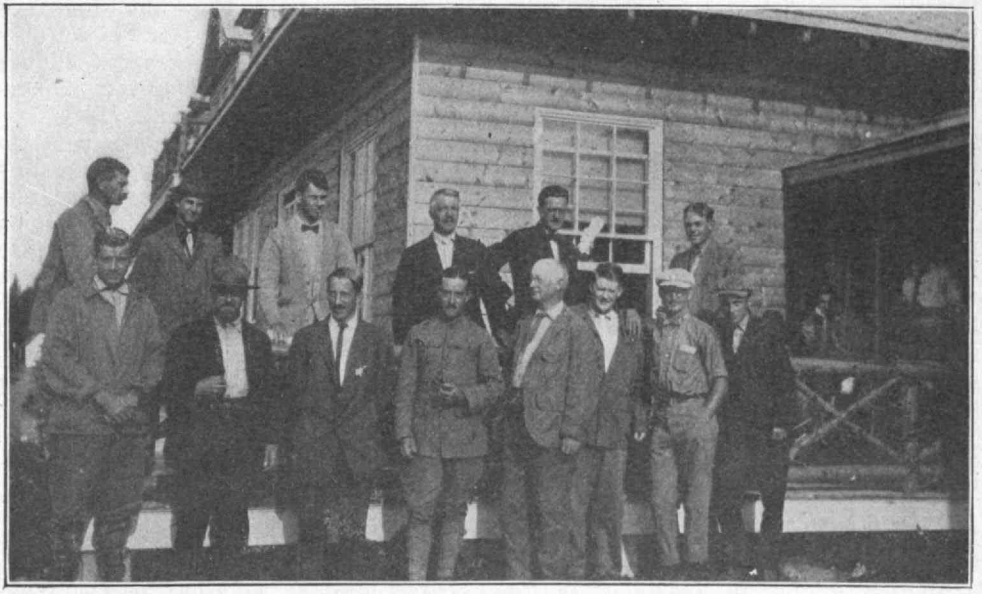
The second session of the Summer Surveying Camp, and the first session at which attendance was required, was held this year from August 6 to September 23 with eighty students and fourteen members of the instructing staff in residence. The experience acquired in the first session of the camp as to its educational possibilities and operating requirements made it possible to conduct the camp with more efficiency than in 1912, and the results obtained, educationally and otherwise, were extremely satisfactory to the instructing staff, and so far as one can judge, to the students also.

The surveying course was broadened somewhat this year by the addition of an elective course in underground surveying given at an iron mine of the Canada Iron Corporation at Torbrook, Nova Scotia. The party taking this trip was organized at the camp and conducted by Prof. Howard; the party leaving the camp a week or so before its date of closing and returning to Boston direct from Nova Scotia. The trip was a successful one and it is expected to make this a permanent feature of the summer school.

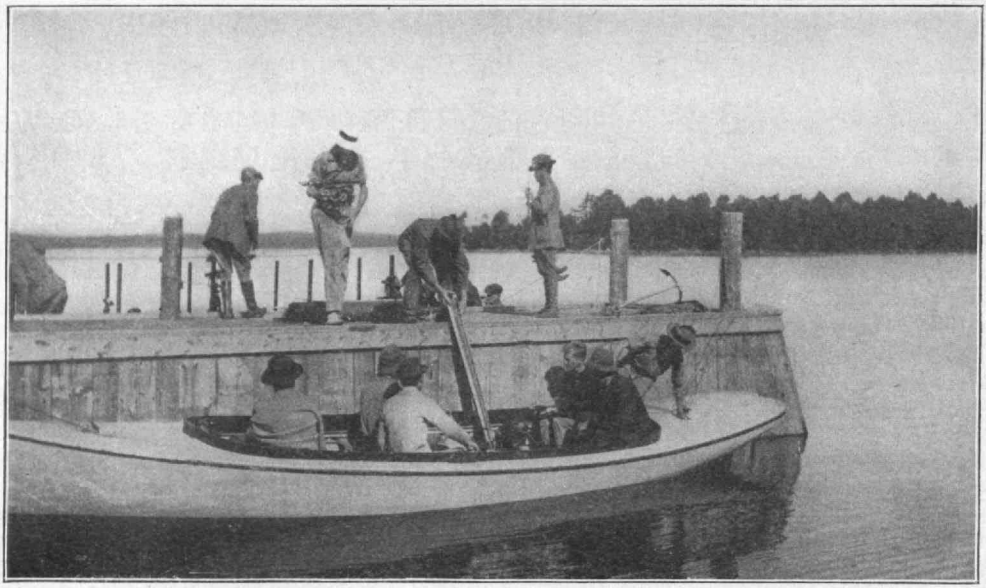
In addition to the regular instruction in surveying, numerous talks upon other and more general matters were given during the session. These included illustrated talks by members of the instructing staff, while the following gentlemen were kind enough to visit the camp for the special purpose of addressing the students:

Prof. William T. Sedgwick, Mr. Louis K. Rourke, '95, commissioner of public works of the city of Boston, and Prof. Harrison W. Smith, '97, of the Institute.

Many of these talks were given on Sunday evening and it is hoped that another season it will be possible to have a speaker at the camp each Sunday. Other visitors



SUMMER SCHOOL CORPS OF INSTRUCTORS



STARTING OUT FOR THE DAY

to the camp during the season included Messrs. Leonard Metcalf, '92, and Charles W. Eaton, '85.

The most notable improvement to the camp property during the year has been the construction of an athletic field given to the camp by Mr. Charles W. Eaton who previously gave a considerable sum for equipment. Owing to the rolling character of the ground in the vicinity of the buildings, no level space was available for such a field without much clearing. This clearing was done last spring, and while the field was not entirely ready for use during the past season, owing to the incompletion of the gravel surfacing, it was possible to use it to some extent, the field sports spoken of later having been conducted there. The field has an area of three acres, providing ample space for a ball field, surrounded by a running track with six laps to the mile, including a straightaway stretch of 100 yards. There is also room for several tennis courts. This field has been named "The Eaton Field" and will prove of great value to the camp in the future.

Another feature of assistance in the operation of the camp was the new post office—Technology, Maine. This is a summer post office established by the government with our caretaker as postmaster, although the official duties of the post office were conducted by our clerk, Mr. J. H. Hession. The establishment of this post office made it possible not only to receive and send out ordinary mail, but also to conduct a parcel-post and money-order business.

In accordance with the custom established last year, the only holiday during the camp session, Labor Day, was celebrated by field sports in the morning won by Arnold B. Curtis, '15, and by a reception in the afternoon to the people from the surrounding villages. A minstrel show was given on the following Saturday evening at East Machias to secure money for the Camp Improvement Fund established by the students this year. This show was given to a crowded house and was a decided success financially and otherwise.

Our experience last year made it seem advantageous, both financially and otherwise, to secure our milk supply from the Drisko farm at Addison, Maine, about twenty miles from the camp. This farm