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The Housing of the Engineering Experiment Station

By PROF. J. R. SHANK, C. E. Department.

In the Ohio State University Monthly of March, 1921, appeared an article written by Dean E. A. Hitchcock, who is also "Director of the Engineering Experiment Station," in which he gave the month of birth of this new branch of activity of Ohio State as February, 1911, when Dean Edward Orton, Jr., appointed Professor N. W. Lord chairman of a committee to "consider the desirability of establishing an Engineering Experiment Station in connection with Ohio State University and to report to the engineering faculty their conclusions and recommendations concerning the same." Dean Hitchcock quotes in this article from Dean Orton's report to President W. O. Thompson that part which refers to the purposes of such an institution, which, in short, is: "To bring new knowledge into the world by original scientific researches, and to show the people of the State how to use and apply the knowledge in our possession."

To any one who realizes the difficulty of getting Dame Nature to reveal anything new from her great store of streets, the importance of proper housing is evident. A glance at the list of projects in Dean Hitchcock's paper, which were under way a year ago, will serve to show the wide diversification of this work. The specialization necessary for getting

an Administration Building which is to be placed just south of Brown Hall. This will not serve to put Brown Hall permanently in the background because the main entrance to Brown Hall, when completed, will face east on the court of the Engineering Quadrangle. The Administration Building will then serve as a sort of link between the Arts Group and the Engineering Quadrangle, as might also be said of the Chemistry Building. Robinson Laboratory will be improved by a proper frontage addition for class rooms and drafting rooms, which will have the same height and architectural appearance as Brown Hall. On the east side of the quadrangle, facing west will be Lord Hall and the new Chemistry Building. It is proposed either to turn Lord Hall to face west or to make additions which will serve the same purpose. The present rather unsightly New Chemistry Building is to be completely surrounded with an addition which will conform architecturally to the other buildings in the quadrangle.

The new Engineering Experiment Station Building is to occupy the north head of the quadrangle and is to be constructed along the same general plans as Robinson Laboratory or the New Chemistry Building, that is, with an architectural front and

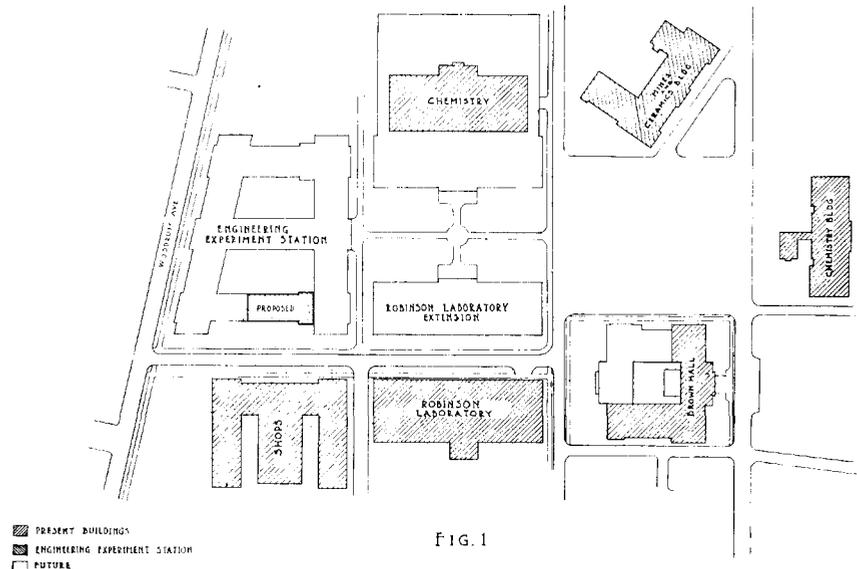


FIG. 1

proper results in the case of some of these projects, such as "Analyzing and Testing Coals of Ohio," or "Soil Survey Relative to Road Failures," or "An Investigation of Danger to Life Involved in Directing a Stream of Water from a Fire Hose upon a High Tension Line" will show that the greatest care must be taken in the design and development of this building. Certain projects now under way are being carried on with the greatest difficulty and under unnecessary expense in actual money and in encroachment upon the space which properly should be used for instrumental purposes.

The campus plans now proposed (Figure 1) show all of the engineering buildings in one special group or quadrangle with an axis running nearly north and south through the center of the Chemistry Building on the south end and the proposed new Engineering Experiment Station on the north. The University architect is now drawing up plans for

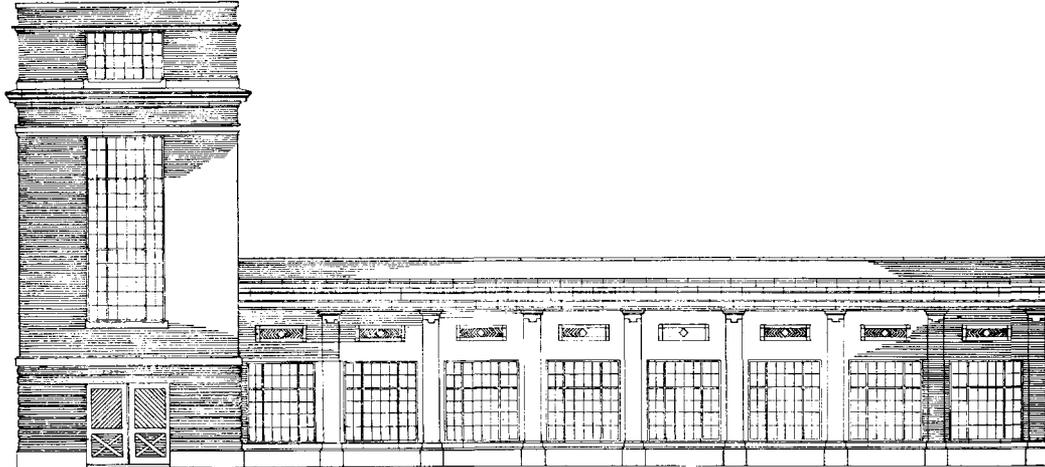
factory type rear construction. The front will contain offices, library, etc., with possibly a lecture room or two. The rear of the building will be parallel to Woodruff Avenue. All of the back of the building will be of unit construction, so far as possible, so that part after part of the building may be added without having to draw up complete new plans and with little more cost than to put up the entire building at once. The railroad spur will be brought up to the building and either run parallel to or into it, thus facilitating the handling of heavy material such as steel or heavy concrete test pieces.

After a year ago the College of Engineering embraced an opportunity to obtain a large column testing machine. This machine was delivered last fall in two gondola freight cars and, owing to the lack of building space was stored in a temporary shed south of the old boiler house. Two of the castings are so heavy that the University crane was

not able to lift them and as a result are not housed, and may be seen outside the shed. The possession of this machine precipitated the need for the first part of the Engineering Experiment Station Building. The elevation and section of this part may be seen illustrated on Figures 2 and 3 respectively, and it appears shaded on Figure 1.

The testing machine is specially designed for test-

The other four bays are to be used at present for the purpose of testing cements, concretes and other building materials, and for research work along these lines. The bay and a half adjacent to the testing machine bay will be devoted to making concrete beams and slabs of not too great dimensions, concrete cylinders, and other masonry tests; and the storage of materials and of test specimens.

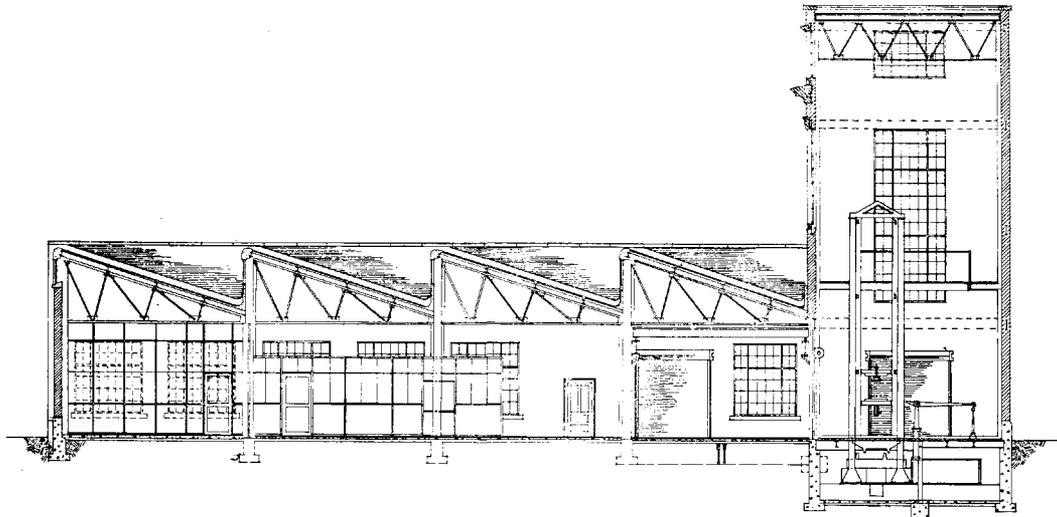


• EAST ELEVATION •

• FIG. 2 •

ing columns, which may be of any building material and may be twenty-five feet high. The capacity is 500,000 pounds. It may be used for general tension and compression work and can be arranged, with some little extra cost, to test beams of considerable span. This machine is the only one of its kind in Ohio, and indeed there are few elsewhere. The University of Illinois has a similar machine. There

The beam testing machine now in Brown Hall will be moved to this bay, which will leave room for proper expansion in Brown Hall of the road laboratory until the time when it also can be moved to the Experiment Station Building. The bay nearest the testing machine bay will be equipped with a hand crane and hand hoists for serving the beam testing machine. The bay and a half north will



• LONGITUDINAL SECTION •

• FIG. 3 •

is a larger capacity machine in Columbus but it cannot be used for columns of over six or eight feet in length and is the property of a private corporation. Figure 3 shows the outlines of the machine as it will appear in the south bay of the part to be built first. A crane will be installed to erect the machine and to serve it during testing operations. It is proposed to install from time to time smaller testing machines in this bay and so make it exclusive for strength testing purposes.

be used for making, storing and testing of cements, plasters, sands, etc., and will house the equipment now in a part of the foundry in the Shops Building. The last bay north will be used for offices and a lecture or assembly room. The north end of the first part constructed will be closed temporarily until conditions are such that more building must be added for work in other branches of engineering.

The Experiment Station Building will probably

(Continued on Page 9)

THE HOUSING OF THE ENGINEERING EXPERIMENT STATION

(Continued from Page 7)

be extended in the near future, or at the time of the construction of the first part, to house the testing laboratories of the Ohio State Highway Department, and the offices of the engineer of tests and his assistants. The quarters now occupied in Brown Hall have long since been inadequate and there has been considerable objection to the odors from chemicals used emanating from the laboratory and penetrating the offices and classrooms in other parts of Brown Hall. It is proposed that this addition be a two-story bay thirty feet by sixty feet, or equivalent space, constructed with proper chemical hoods and dust tight rooms for the brick rattler and other like physical testing apparatus; all to be properly ventilated to restrict and carry off these objectionable features. It is intended that all materials tests for roads and highway bridges for the Highway Department be tested in this space. This arrangement will continue the hearty co-operation between this branch of Highway Department and the University as has been the case in the past. It is expected that the Highway Department will finance wholly or in part this particular extension.

Another branch of the Engineering Experiment Station which cannot be housed in this particular building is the Sewage Testing Station. It is proposed to situate this about one thousand feet west of the Home Economics Building on the main Indianola combined sewer at its intersection with the main intercepting sewer. This testing station may in the future be combined with a disposal plant for the University, thus serving two very useful purposes, as well as making the University independent in that respect.