

front of the building are monuments to Alfred Krupp and Werner Siemens. Some illustrations are given of the general appearance of this building.

This Technical High School had its beginning in 1799 as a Royal Building Academy, which was combined in 1879 with a Trade Academy established in 1821. Since 1879 it has borne its present name. On the celebration of its one hundredth anniversary in October, 1899, the Kaiser granted the school the right to bestow the degree of Doctor of Engineering, a degree first conferred upon Prince Henry of Prussia (honoris causa).

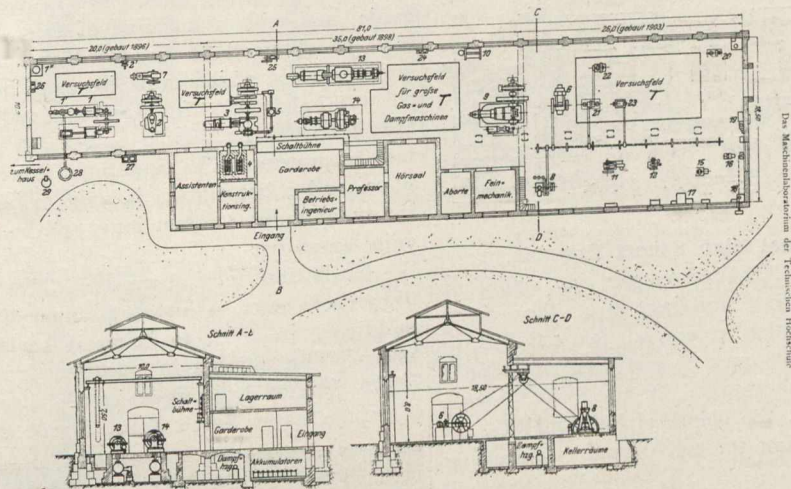
There are about fifty-five fully qualified professors, besides many assistants, private lecturers, etc., making a total teaching staff of nearly two hundred. There are nearly 5,000 students in attendance, of which number about 80 per cent. are fully qualified. Nearly one-half of the students take the mechanical and electrical course, a fact not surprising in view of the great amount of manufacturing done in Germany.

The Berlin Technical High School, like other Prussian schools of the same class, is under the control of a Rector and Senate. The Rector is elected annually by the votes of

that it was possible only to glance through many of them in order to leave proper time for the machine, gas engine, belt-testing and hydraulic laboratories; which will now be described in some detail.

(a) The Engine Laboratory.—The building containing this laboratory, which was erected in the years 1896, 1898 and 1903 (see figure), is 365 feet long and of width varying from 33 feet to 60 feet, the clear height of the main portion being 26 feet. It is well lighted throughout by very large side windows, as well as by others in the roof, and the whole main part is served by a travelling crane of five tons' capacity. Some of the engines are used for light and power, but as there are so many of them in the building no difficulty seems to be experienced in getting any machine desired for experiment.

The laboratory contains a horizontal cross-compound engine of 60 horse-power, directly connected to a pump and all parts specially arranged for testing; a 220 horse-power quadruple marine engine, complete, with condenser; a 150 horse-power triple expansion engine for superheated steam; a 300 k.w. Brown-Boveri Parsons turbine; a 200 k.w. turbine by the Allgemeine Electricitäts Gesellschaft, Berlin; a



The Engine Laboratory.

1, 1' horizontal engine and pump; 2, quadruple expansion engine, 220 horse-power; 3, triple expansion engine, 150 horse-power; 4, superheater; 6, Wolf locomotive type engine; 7, air compressor; 9, suction gas engine, 150 horse-power, 13—300 k.w. Parsons turbine, 15—200 k.w. turbine. Other numbers refer to small machines. T are test and research floors. The dimensions are in metres.

the professors, but his election must be approved by the King of Prussia.

Returning now to the buildings, it will be seen from the plan of the grounds that almost every laboratory has a separate building of its own, the main building being used for the collection of models, lecture rooms, museums, professors' rooms, draughting and other rooms of like nature, some laboratories and the offices of the institution. There are thus ten buildings, viz.: 1, The main building, already mentioned; 2, a building for mechanical engineering; 3, a chemical building; 4, a building for experiments on heating and ventilation; 5, a building for testing materials and gas engines; 6, an electrical laboratory building; 7, a building for steam engines; 8, a boiler-house; 9, a chemical museum; 10, an hydraulic building. These buildings also contain the laboratories for belt-testing for gas and oil engine and automobile testing, and for the testing of the power required to drive machine tools.

In such an institution it is evidently impossible in limited time to look carefully into all the laboratories, so

40 horse-power Wolf locomotive type engine and boiler; several types of air compressors of good size; a 150 horse-power Deutz suction gas engine; a number of gas and gasoline engines, and a Borsig refrigerating machine. In connection with the machines described there are necessary condensers and pumps, gas meters and all conveniences for testing, and nearly every machine drives a dynamo, which is used to produce the load for experimental work. Friction brakes are not considered as reliable as electrical loads, so that the former are not used to any extent.

This laboratory also contains a number of dynamometers of various styles, apparatus for testing nozzles and orifices, and several fairly large testing floors. All pipes are placed under the floor, either in trenches or in the basement, which extends under part of the laboratory and provides room for some of the condensers and pumps.

This laboratory is well adapted to research work on account of the large size of the machines, and some very valuable work has been done, results of which are published in German periodicals