

MAGNETIC OBSERVATORY

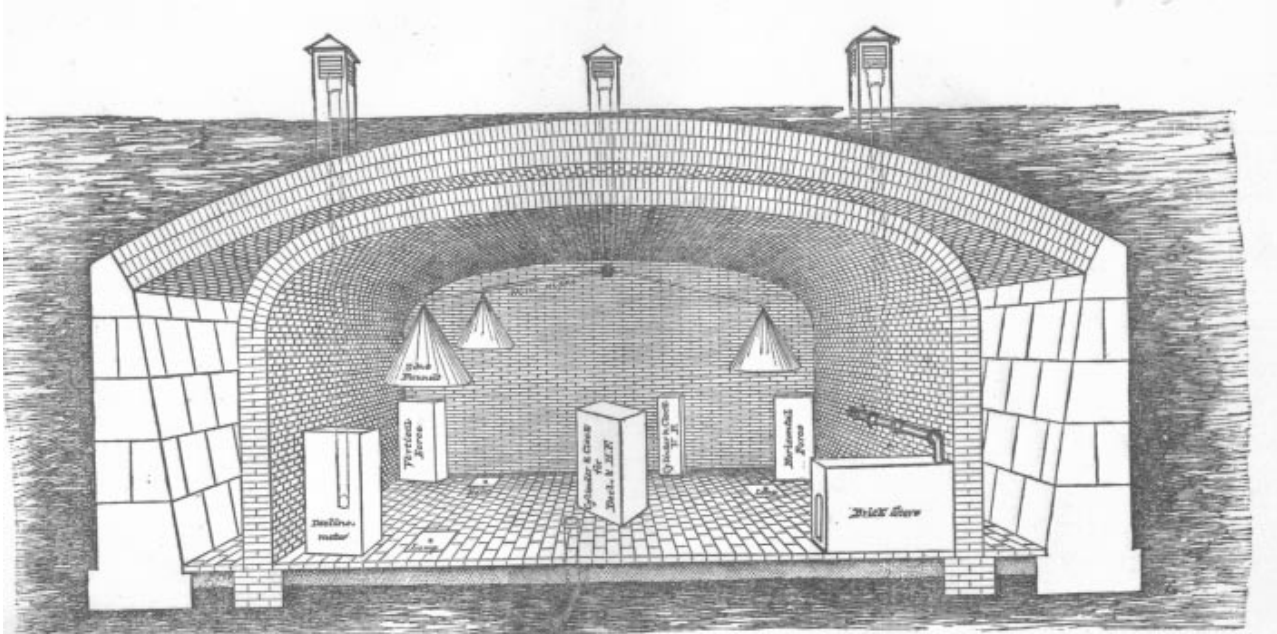


Fig. 1. Cutaway etching of the magnetic observatory from the 1877 Regents Report frontispiece. The door to the observatory is not shown.

The Magnetic Observatory was constructed in 1876 to house the federal Coast and Geodetic Survey project's instruments that measured and recorded fluctuations in the earth's magnetic field. The federal program ended in the middle 1880s, and the observatory was used for other purposes, and is now used by the department of zoology to strip flesh from animal skeletons.

In 1875 the Coast Survey Department of the U. S. approached the University of Wisconsin about establishing a magnetic observatory on the UW grounds. The government's interest in Wisconsin was largely due to the work of Professor John Eugene Davies who was an instructor of Astronomy and Physics at the University of Wisconsin from 1868 until his death in 1899. Among other achievements, Davies contributed largely to the U. S. Coast and Geodetic Survey literature, and some of his articles attracted the attention of Charles Peirce, the son of Benjamin Peirce director of the Coast Survey.¹ In 1876 President Bascom reports:

The officers of the survey proposed to furnish all the necessary instruments ... upon simple condition that the University would provide the building required for conducting the observations prescribed. The interests of science, as well as State pride, dictated a prompt acceptance of the proposal. The result is the construction of the proposed observatory, now nearly completed, under the direction of an officer [J. E. Davies] of the department named.²

The structure was designed by D. R. Jones, the architect of Assembly Hall and the Washburn Observatory. Built for about \$1200 in 1876 by James Livesey, a local mason who had built North

Hall in 1849, the underground chamber was reached by a long passage into the side of the hill, with its door at the end of the passage just flush with the ground. The chamber was 16 feet by 18 feet with an arched brick ceiling about 6 feet below grade. It was built entirely of masonry laid with hydraulic cement to make it waterproof. To avoid interference with the magnetic measurements no iron was used in its construction. As shown in Fig. 1, there was an outer wall to the chamber which created a 3 foot dead air space which helped keep a steady temperature. There were several ventilator shafts which were the only visible part of the observatory. The location of the observatory is just below the southern edge of the Birge Hall greenhouses. The passage to the door is visible from the corner of University Avenue and Mills Street.

There were magnetic observatories at several longitudes. The scientific purpose of the observatories was to produce: "A continuous and reliable record of the variations in the direction and intensity of the earth's magnetic force, by means of photographic self registration."³ To make the measurements the chamber contained a self-recording magnetograph and a magnetic declinometer, instruments which kept track of the motion of an extremely precise and isolated pendulum.⁴ The data from the observatories was used to investigate sunspot activity, aurorae effects and an attempt to predict the weather. The Coast and Geodetic Survey Department gradually collapsed under the forces of financial and management scandal, and Congressional and public ridicule of its charter. The instruments were eventually removed from Madison to Point Barrow Alaska. Ten years after it was completed, the observatory's purpose had disappeared, and it became a campus curiosity.⁵

In 1896 Dean of Agriculture W. A. Henry wrote to the regents that Dr. Harry Russell was planning some experiments in the curing of cheese where an extremely stable temperature was required. "The old magnetic observatory, just southwest of Agriculture Hall [now South Hall] fulfills our requirements very closely, and as the observatory is of no use whatever to the University at the present time I ask that it be turned over to the Agricultural College."⁶ After the experiments done by professor Russell, the observatory is listed on various inventories as the oil storage house (before the service building was built), and the potato cellar. The physical plant now refers to it as the root cellar.

In 1950 the regents spent \$4134 to repair and remodel the root cellar for animal rooms needed by zoology.⁷ The zoology department uses it to strip the flesh from bones to be used in displays. The animal parts are placed in cages with a kind of beetle, which feed on the remains until the bones are completely clean. The cellar has been equipped with modern heat and a new door, and the smell is no better than might be expected. This is the first known structure erected at the University for a federal science project.⁸

1) Thwaites, Reuben Gold, *The University of Wisconsin Its History and Its Alumni*, p. 321, 112.

2) *Report of the Regents of the University of Wisconsin*, 1876 p. 5; 1877, p. 33.

3) *Report of the Regents of the University of Wisconsin*, 1876 p. 5. There were magnetic observatories at Greenwich, Paris, Toronto, and Madison.

4) The intent of the Coastal Survey in making these measurements was the determination of the exact shape of the earth which could be used to more precisely generate surveys and maps of the earth. Thomas G. Manning *U. S. Coast Survey vs. Naval Hydrographic Office*, pp. 74-90.

5) *The Daily Cardinal*, December 20, 1899, p. 9

6) *Minutes of the Board of Regents*, April 6, 1896.

7) *Minutes of the Board of Regents*, September 30, 1950 p. 26.

8) Later ones included the Forest Product Laboratory and the Sterling Hall addition that housed the Mathematics Research Center.