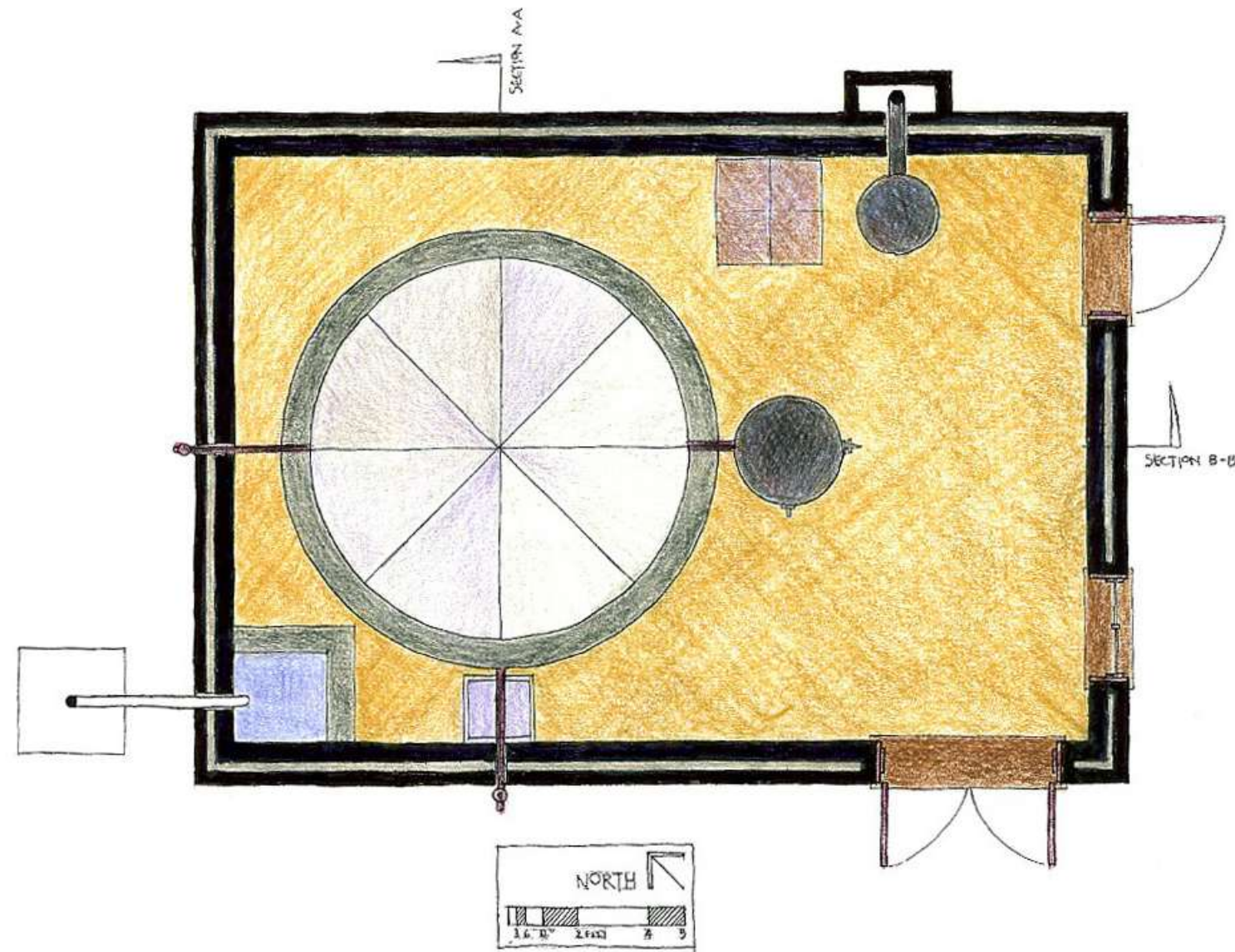




Manitou Gas Company Plant

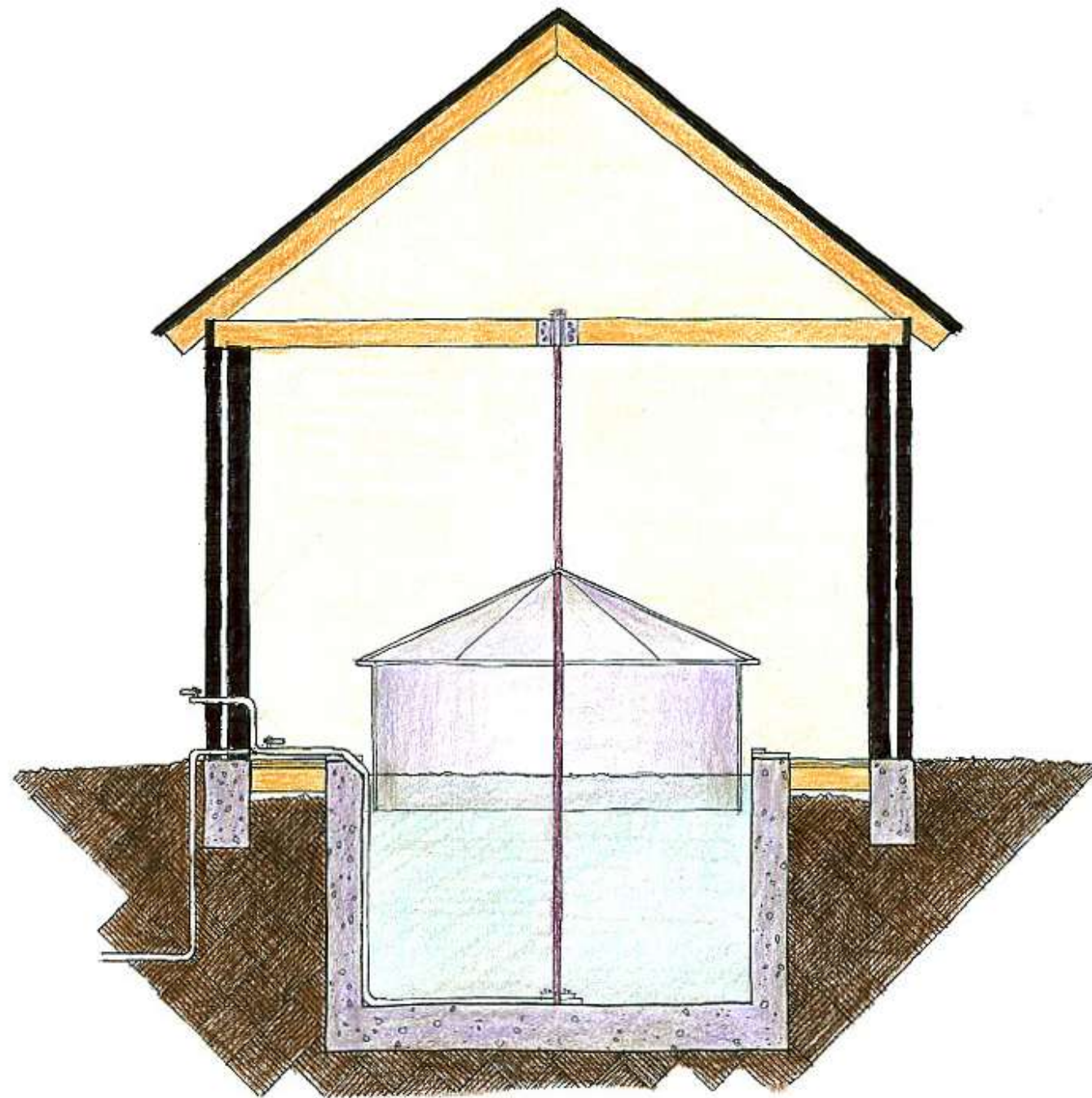
The Story in Seven Drawings

THE MANITOU GAS COMPANY PLANT opened for operation in 1906, and was a going concern for 20 years, until 1926. The much reworked building is still standing, the last remnant of this lighting technology once familiar in small Manitoba communities. Research on the subject, and on the building, carried out in 2013 and 2014, has revealed a fascinating and mostly forgotten aspect of Manitoba's technological history. A report was developed for the Manitou Culture and Heritage Committee to trace the history of this technology in Manitoba, and to describe the operation of the Manitou plant. This collection of drawings is an appendix to that project.



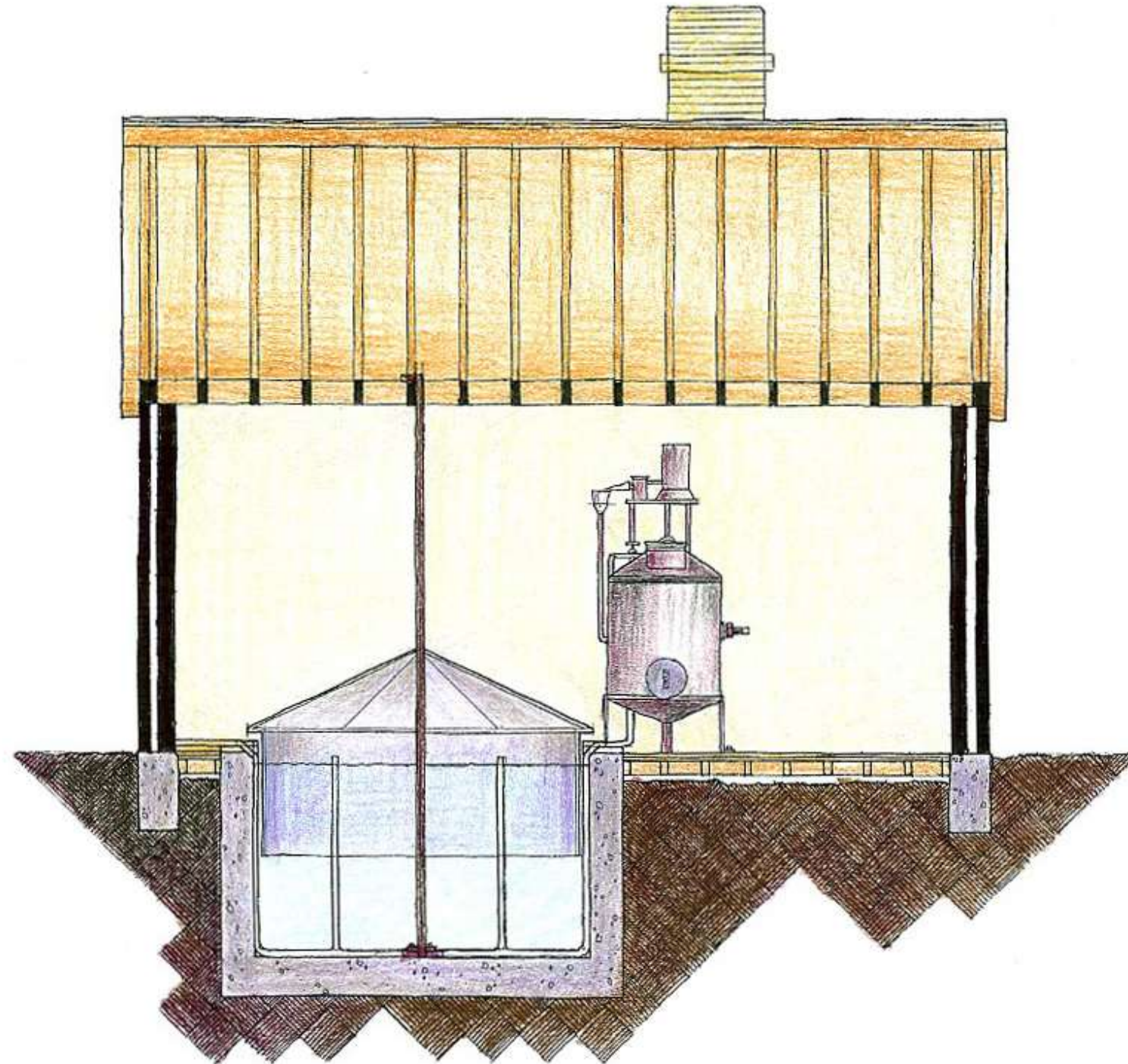
Floor Plan

The floor plan reveals a small building (19 feet by 26 feet six inches) with the west end dominated by the gasometer – a circular concrete cistern topped with a faceted crown. It was in the gasometer that the acetylene gas was stored. The rest of the building was devoted to a large work area for other necessary apparatus required for the plant's operation: a generator for use with granulated carbide (to the right of the gasometer), a purifier (part of the generator), a 100-light meter, and two dryers situated to the right of the circular stove on the north wall. A small square cistern in the southwest corner fed water to the cistern.



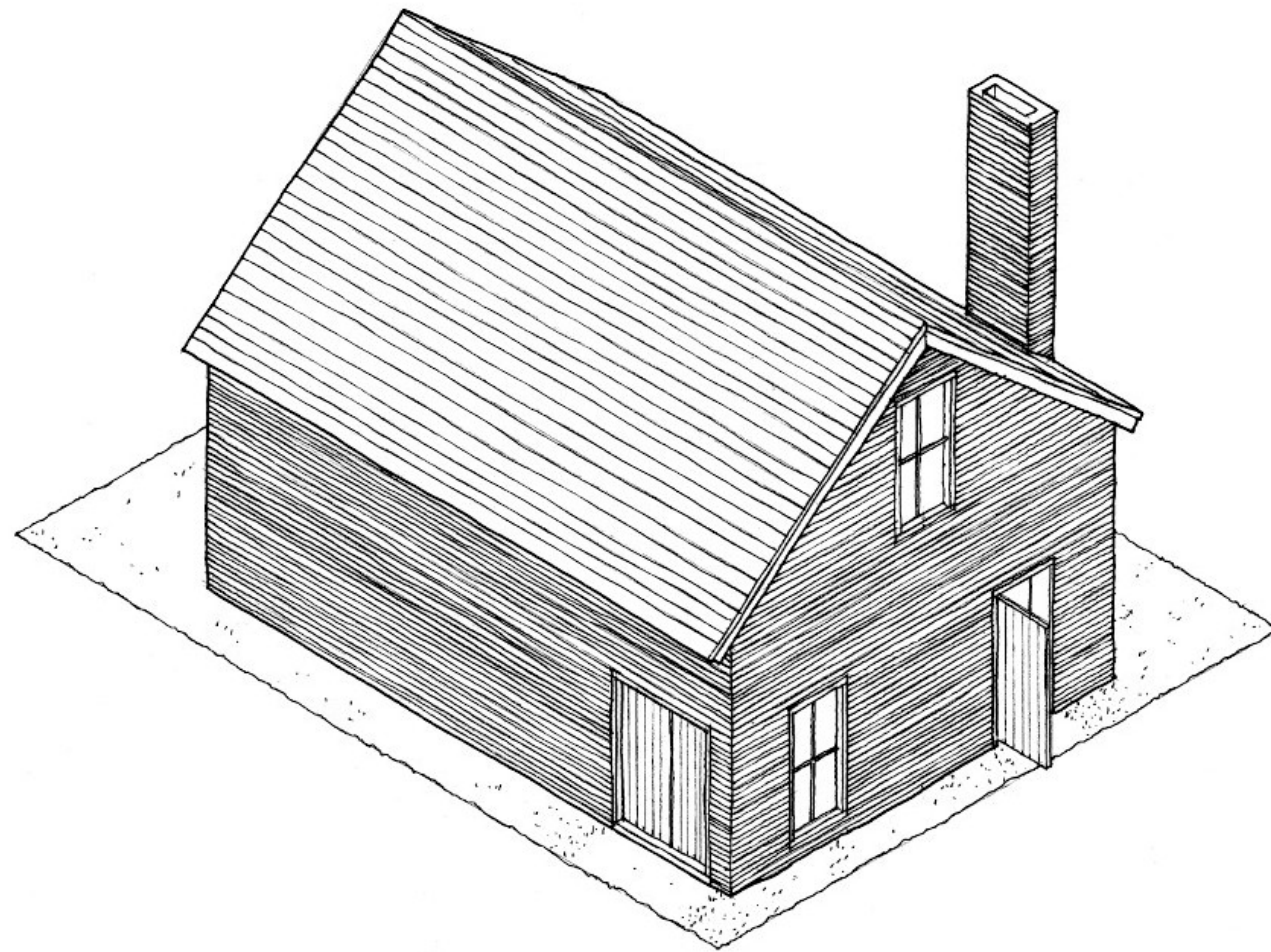
Section A-A

This vertical section through the building's western end shows a key aspect of the plant's operation: the position of the cistern that formed the lower part of the gasometer, and the position of the hood (or crown) that fit into the vat, and which was used to enclose and retain the acetylene gas. In this drawing the hood is presented near its highest point, with a large quantity of gas having been introduced. It is important to remember that the water in the cistern acted primarily as a seal to enclose the gas in the hood, and secondarily as a benign agent holding the slightly volatile acetylene gas from contact with air in this small space.

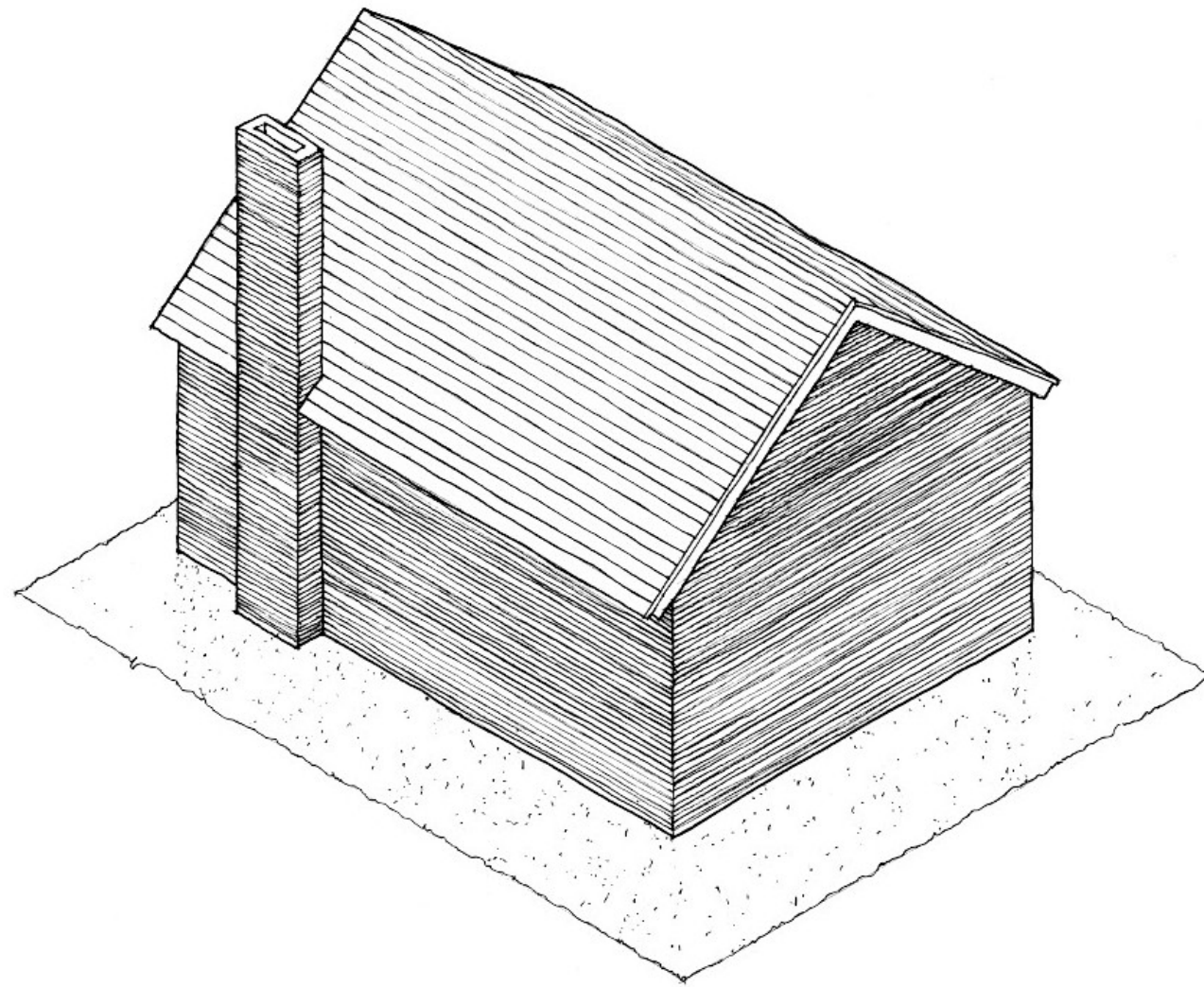


Section B-B

This section through the middle of building on its long side shows the two key features of the gas plant: the gasometer (with cistern and hood) on the left and a conjectural suggestion for the generator to the right. In this drawing the hood of the gasometer is low, to suggest its appearance at the onset of a gas production cycle.

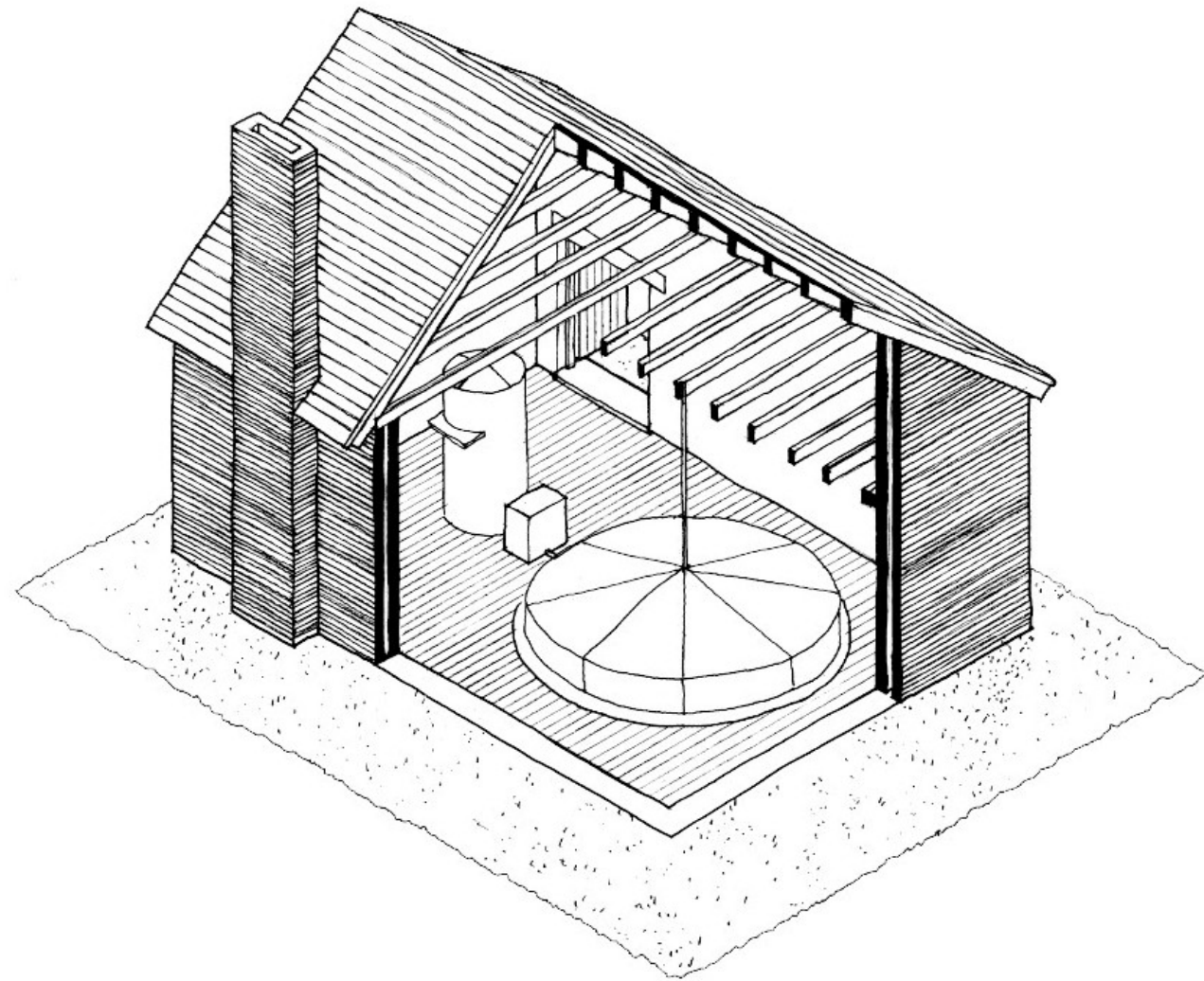


Isometric View from the Southeast
This focused view of the building shows the east (main) face with single door and windows, and the southern face with double doors. The straightforward, utilitarian appearance of the building gives no hint of the interesting goings-on within.



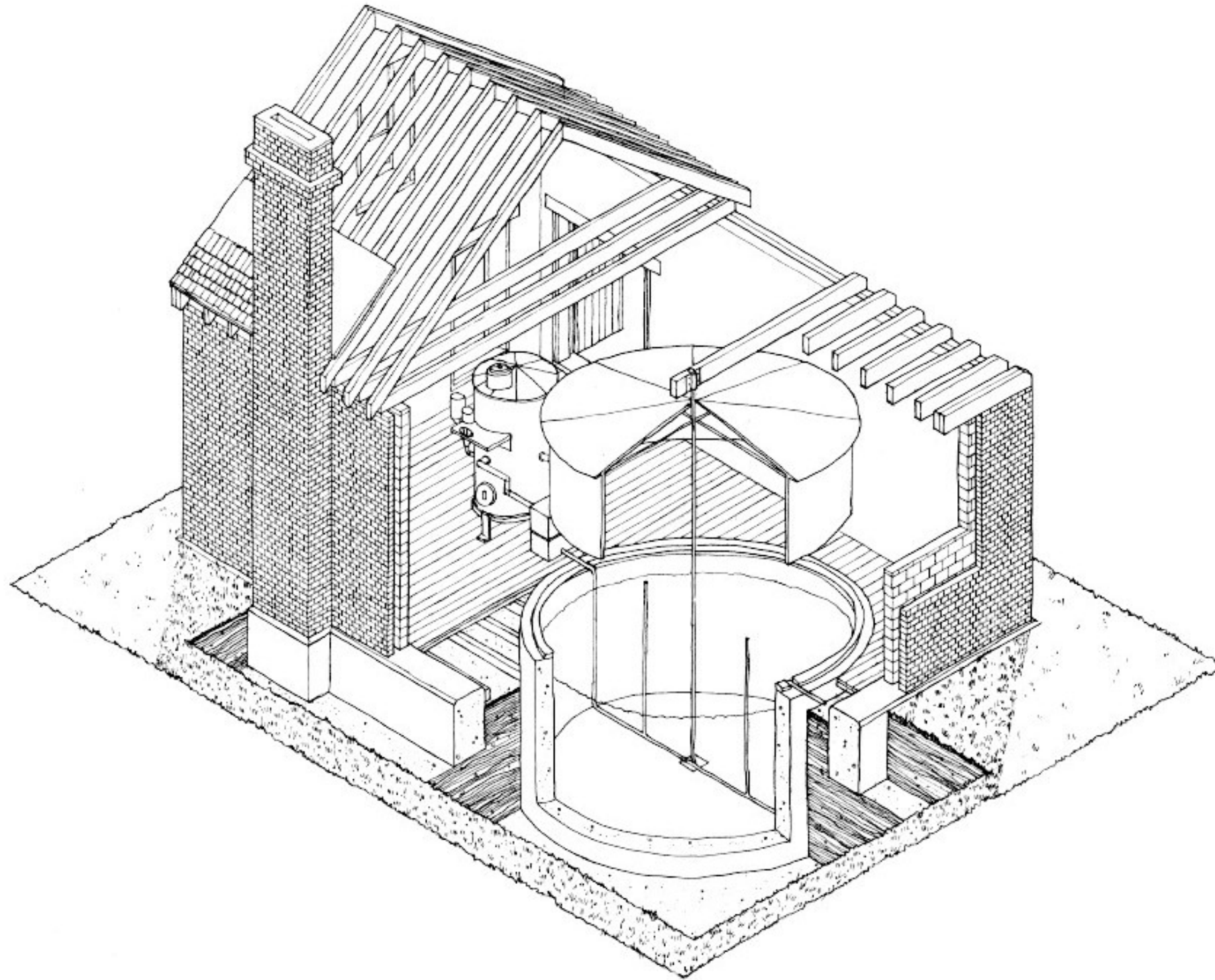
Isometric View from the Northwest

The building as seen in the view above is here spun 180 degrees so that we are now presented with the blank brick walls of the northern and eastern facades, along with the tall chimney. The little building looks even more severe.



Cutaway Isometric View from the Northwest

The same view of the building on the preceding page is here cut away to reveal the basic features within – the gasometer lid to the right and the generator and purifier to the left; the generator is the larger cylindrical piece of apparatus.



**Detailed Cutaway Isometric View
from the Northwest**

This even more detailed view of the building, from the same vantage point seen on the preceding two pages, shows the walls and rafters more dramatically cut away. In this view it is now possible to discern the foundation works and more importantly the placement and operation of the gasometer – the circular cistern and the crown that would fit into the cistern.

It is suggested that a full appraisal of this drawing be informed by reading the descriptions on the following page.

Operation of the Manitou Gas Company Plant

The absence of photographic images and descriptions of technical operations of a municipally-sized acetylene gas plant has meant that the description of the Manitou facility is slightly conjectural. At the same time, there is enough physical evidence at the site, some personal recollections, and sufficient research to fairly confidently approximate what this place looked like, and how it operated during its working life, from 1906 to 1926.

Certain facts about the building are known from the historic record, and from corroboration from site investigations. It was a small building, measuring 19 feet by 26 feet six inches. The gasometer included a circular concrete cistern measuring 12 feet six inches in diameter, with a wall thickness of one foot. The building was faced with brick, possibly from a yard in Morden. The cistern was at the western end of the building, leaving a large work area at the east end for other necessary apparatus required for the plant's operation: one purifier, one 100-light meter, one generator for use with granulated carbide, and two dryers.

Measurements and information provided by current owners add to the record: the walls are approximately 18 inches thick, comprised of facing brick, approximately a six-inch air space and an interior wall of concrete blocks of about one foot thickness. The foundation was of poured concrete. The single surviving photograph of the main face of the building shows one door and two large windows, the one opening into the main floor space quite low to the ground. Traces of a two-door opening on the south side of the building are still visible in the application of the current stucco covering. There was a fairly large brick chimney on the north side. A water well and windmill were located just outside the plant at the southwest corner. Well water was collected in the main building in a small squarish cistern, about four feet by three feet.

All of these facts have been developed for this drawing. Certain other aspects are conjectural, especially regarding the placement and appearance of the generator, purifier and dryers. Given information developed above, and the application of some common sense, it is supposed that the generator (where the acetylene gas was produced) was near the cistern, and likely convenient to the dryers – we have placed it to the east of the gasometer, with the understanding that the gas would be more efficiently distributed into the hood of the gasometer in this position. The hood of the gasometer is shown here as the faceted top of the cistern,

The purifier, which was designed to remove noxious chemicals from the process, was likely placed at the south edge of the building, where the gas was moved before being distributed to the town. As an aside, it is noted in the historic record that acetylene gas possesses an offensive odor similar to decayed garlic, and so penetrating that one part of gas in ten thousand of air was distinctly noticeable – a valuable property, as by it leaks could be known long before they became dangerous. When the gas was burned after passing through a purifier and in a proper jet, there was no odor.

The placement and appearance of the dryers has eluded us – we surmise that they would have been close to the generator but also likely close to the stove that was vented by the chimney (at the northeast corner of the building) so that the heat could be used in the drying process.

It is notable that the observations cited from Mr. McNair, the inspector of gas plants in the province, included the specific measurement of the gasometer as 10 feet deep. In fact the Manitou cistern is six feet six inches deep, so it is assumed that the original measurement also included the height of the crown – thus about four feet. It is known that this part of the apparatus featured a shallow hood and was faceted. Research also suggests it rose and fell as gas was supplied or expelled, and so there is an assumption that there might have been a three to six inch clearance in the cistern for the hood, and that it likely was secured with a rod that ran from the bottom of the cistern to one of the joists in the roof structure. In this drawing the hood is presented near its highest point, with a large quantity of gas having been introduced. It is possible that a pulley and chain or rope system allowed the hood to be raised independent of gas production, for inspection and cleaning of the cistern. It is important to remember that the water in the cistern acted primarily as a seal to enclose the gas in the hood, and secondarily as a benign agent holding the slightly volatile acetylene gas from contact with air in this small space.