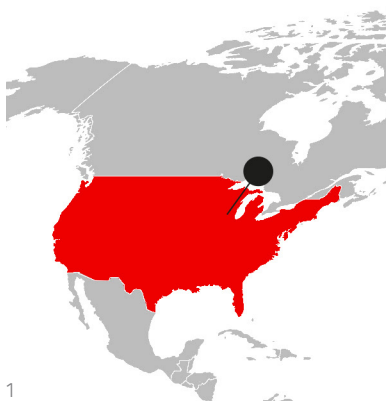


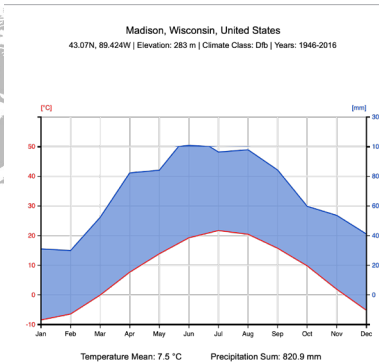
Solar Hemicycle

Middleton | USA

1



1



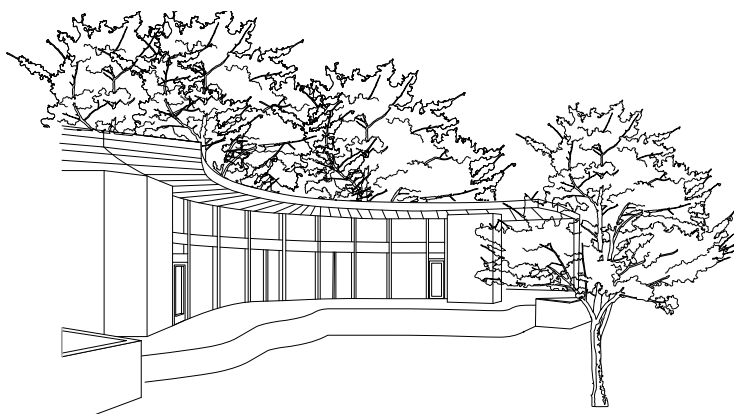
2

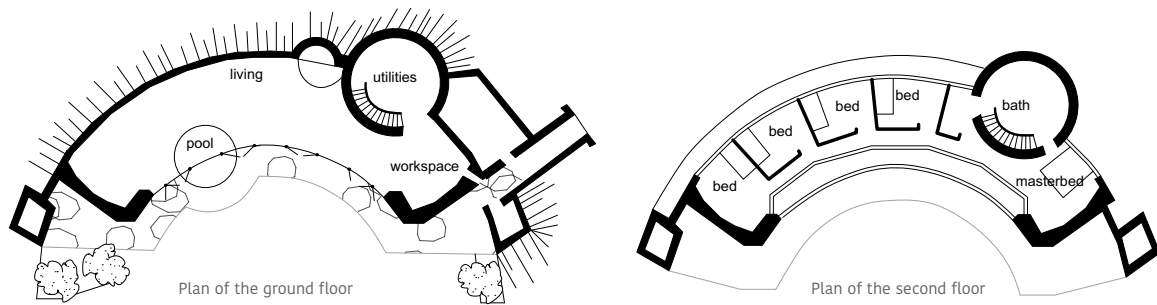
Climate | Geography | Vegetation

Wisconsin has a continental climate. That means the summers are warm and winters very cold, especially in the upper northeast and north-central lowlands. The average annual temperature ranges from 4°C in the north to about 10°C in the south. Wisconsin is bordered on the east by Lake Michigan and by the Mississippi River on the west. Wisconsin's western edge is formed of immense bluffs overlooking the Mississippi. The southern border runs through flat, fertile land watered by shallow rivers. The northern boundary crosses through dark forest relieved by high wetlands and lakes. The vegetation is divided into northern and southern floristic provinces by a line that runs in an S-curve northwest from Milwaukee to Hudson. North of this line the vegetation is a broadleaf forest containing conifers-pines, hemlock, spruces, and fir. Southwest of the line are several species of oaks, and by the prairies-areas dominated by grasses and tall herbs.

Building volume

The overall plan is complete semi-circle of 180 degrees, on each side of the house 30 degrees is given over first to large flowers boxes and in addition to two two story boxes built into the berm. All in all the house is 120 degrees in width, just a stone tower interrupted that circular form, which divided the ground floor into a living-dining room on the left and a workingspace on the right. (vgl. Sprague Paul I 2001 I page 4)

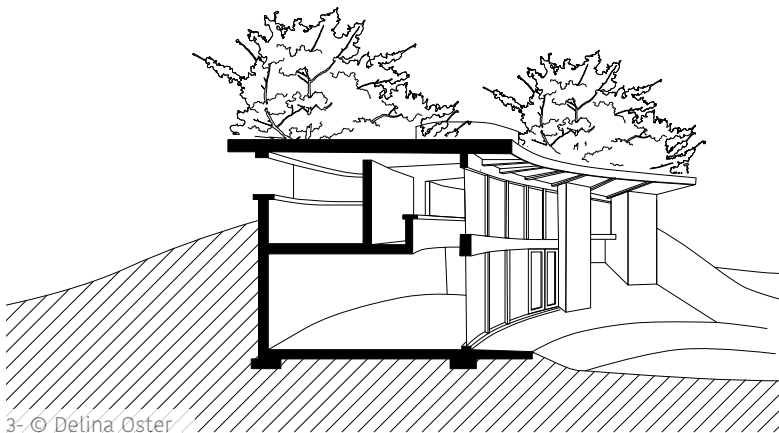




3- © Delina Oster

Construction | Building techniques

The Solar Hemicycle House had a really strong concept. The masonry walls weren't built on the concrete slab, which serves as its floor, because the stone walls he constructed were too heavy. So the architect developed a deep foundation a mat of concrete laid over gravel, „ (...) so any water which found its way into the foundations would drain away and not freeze.“ (Sprague Paul I 2001 I page 4). In this combination of massive walls and foundation it was a perfect heat storage. (vgl. Uwe Wienke I2013I L. 60-65) In addition the slab served as a support of the walls, which separated the fixed panels and the doors making up the glass walls of the south front. The main point, cause this wall supported half of the weight of the roof and the weight of recessed second floor. To catch rainwater towards the berm the roof was flat and sloped to the north through that 2-inch long pipes penetrating the deck near its northern edge.



3- © Delina Oster

History

The Solar Hemicycle House, was the second house of Herbert and Katherine Jacobs. Designed by their architect Frank Lloyd Wright in the year 1946-48, in Middleton, Wisconsin, United States. However, this house differs from all the other houses that F.L.W. designed before and from many houses that followed.

Material | Sustainability

In the construction Jacobs already used second hand material „(...)all glass culled from old store fronts.“ (Paul Sprague I 2001 I page 5) Moreover the walls which were hollow and facing the outside temperature were filled with vermiculate for insulation. Wright built the house from stone, concrete and wood the building retained solar energy, consequently it was an early attempt at energy-efficient architecture (vgl. Anthony Denzer I 2001).

Delina Oster

Sources

1 <https://freevectormaps.com/world-maps?ref=top-nav>

2 <http://www.klimadiagramme.de/Frame/indexeu.html>

3 elevation, section, groundfloor plan and firstfloor plan drawn by Delina Oster student@msa_muenster school of architecture

4 <https://www.wisconsinhistory.org/Records/Article/CS387>

5 <https://mywisconsinwoods.org/wp-content/uploads/2014/03/Early-Vegetation-of-Wisconsin.pdf>

6 Sprague, Paul (July 21, 2001). „National Historic Landmark Nomination: Jacobs, Herbert and Katherine, Second House“ (PDF). National Park Service. Retrieved April 19, 2015.

7 Denzer, Anthony (2013). The Solar House: Pioneering Sustainable Design. Rizzoli.

8 Uwe Wienke (December 5, 2013). „Klimagerechtes Bauen in den USA - Das Haus Jacobs von Frank Lloyd Wright in Middleton, Wisconsin“