

The shape of the ellipse constructed from the number 7

In architecture, as well as in garden design, pleasant, harmonious forms emerge when a person calculates relationships starting from a central form element and brings them into a logical connection.

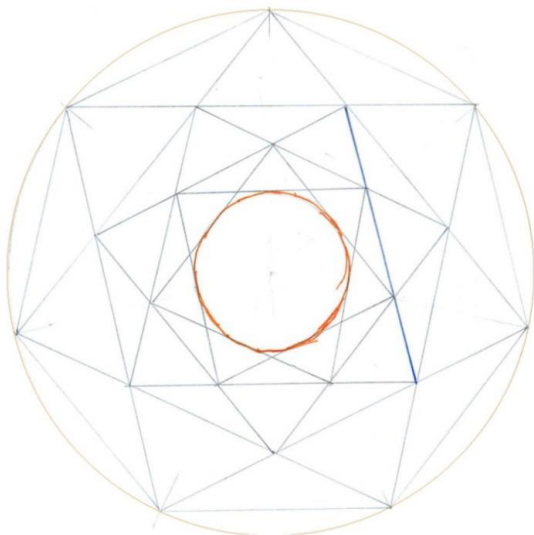
When designing the new stone place in the shape of an ellipse, the radius of the perimeter of the seminar building (8.86 m) was chosen as the central form element for further calculations.

The grounds of Naone were divided into 7 circles, which correspond to the 7 planets.

The number 7 is used to calculate the width and length of the ellipse:

on the perimeter of the house (radius = 8.86) a 7-sided figure was drawn, and a 7-pointed star constructed within it. In this 7-pointed star you can see a new 7-sided figure in the center. A second 7-pointed star is then drawn into this, at the same time creating a third 7-sided figure in the center. A third 7-pointed star is drawn into this, which has an inner circle with a radius of 5.30m. This measurement of 5.30m is taken as the width of the ellipse. The length of the ellipse corresponds to the long side of the second 7-pointed star that measures 9.60m (see blue line in the drawing below).

radius perimeter, Seminar house = 8.86m

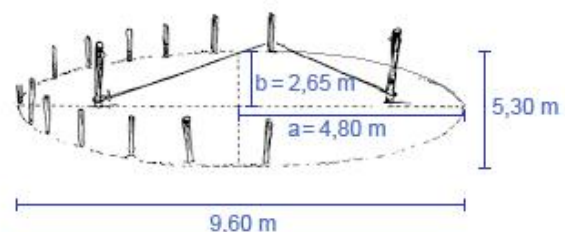


Transfer of the elliptical shape into the terrain with the so-called gardener's construction

Length: 9.60m; width: 5.30m

The focal points are calculated using the formula of "linear eccentricity": $e^2 = a^2 - b^2$ (a is half the length, b is half the width)
 $e = 4 \text{ m}$; $e^2 = 16,20 \text{ m}$

The focal points are located on the longitudinal axis 4m from the center (80cm from the end points).



Contribution by Bettina Brune, graduate forestry engineer, June 2024.