

OKATHERM - REFERENCES

Deutschland | Berlin | Hippopotamus House

**Project:**

Hippopotamus House

Standort:

Berlin, Germany

Product:

OKATHERM

Square metres:

1700 m²

Special features:

The sweeping arch of the hall

Architect:

Jörg Gribl, München

Execution:

Helmut Fischer GmbH, Talheim

Completion:

1998

Towards the end of the nineties, Berlin Zoo, which was opened as early as 1844, was given a new Hippopotamus House. The special feature is the free spanned, glazed network dome, which encompasses two pools with different radii in its double-curve flowing form. The glass dome spans the hippopotamus pool with its diameter of about 29 m and the 21 m pool for the pygmy hippopotamus, while the visitor hall cuts into the two pools in a circular shape. This means that ground plan of the pools represents sectors of a circle with a central angle of approx. 225°. The architects' plan to achieve a harmonious transition between the two domes was realized in a very elegant way. The gliding surfaces allow a uniformly meshed network made of plane square meshes and thus flat

insulating glazing with rectangular panes. For the mathematics freaks: the creating parabola is allowed to flow over the identical parabola, which is vertical to the latter, as a lead curve, and in this way generates the circular ground plan curve image of a paraboloid of revolution. To cover the two pools with their different radii, two different parabolae, which were also connected with a freely defined transitional curve, were also selected as lead curves. The sweeping arch of the hall gives an overview of what is exhibited here as soon as one enters the building. At the same time, the perspective is directed through the long diagonal out into the open-air enclosure, so that the connection to nature is retained for visitors as well as animals.



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The difference between the curves is given for architectural reasons; since, however, the lead lines must be identical with the creating parabola for circular ground plan curves, this leads to two different parabolae for the two pools, and these must be merged in the transitional area. This means that there is distortion for the rectangular panes, particularly in the transitional area, but this is within the framework of tolerable pane distortion. With this exception, and with the exception of the edge rods, all rods are also of the same length, thus allowing rectangular panes. For the intrusion of the visitors' hall in the domed construction, a circular cone standing on its tip is described

with an angle of inclination of 8° , and this cuts the dome in a free sweeping edge. The surface of the cone represents the façade surface, which can also be glazed without distortion as a standard surface area thanks to the 8° inclination. This construction indicates the possible ways of representing network domes in practically any form with the help of gliding surfaces, and of cost-effectively producing the resulting uniform network using flat panes. The production and the logistics of the rectangular panes are of particular significance here, since they are trapezoidal, with hardly perceptible differences in their dimensions.



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