

Manifestation of an Exploding Star

In April 2018 ESO (European Southern Observatory) opened a spectacular and innovative planetarium and visitor centre, the “ESO Supernova” by Bernhardt und Partner. The planetarium, located adjacent to the ESO headquarters at the Research Campus Garching, models a binary star system in which one star transmits mass to the other. The heavier star will ultimately explode as a supernova, producing more light than all the many billions of stars in our Galaxy combined.



View of the ESO Supernova close double-star system by Bernhardt and Partner Architects, Credit Claudia Neeser

The implementation of such a gigantic natural event in architectural language is certainly no easy task. Bernhardt and partners, who have already planned the House of Astronomy and the EMBL International Centre for Advanced Training in Heidelberg, draw from a comprehensive pool of experience.

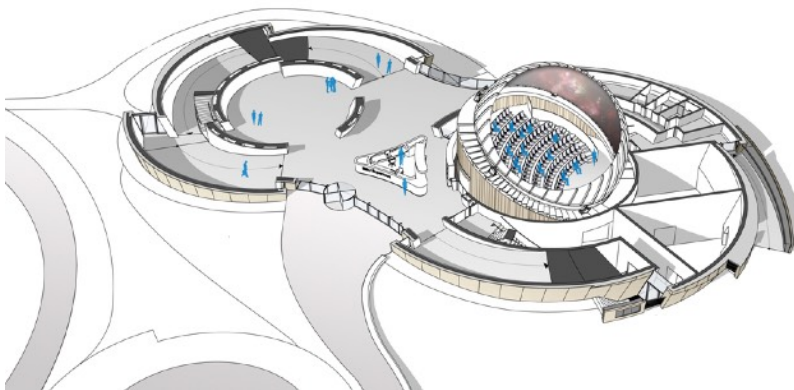


Image 3_ESO Supernova esn150224-level-1© Architekten Bernhardt und Partner

The extravagant shape of the ESO Supernova with its three aboveground storeys poses a major challenge for all the offices involved in the construction. Thus, the highly complex engineering structure with its 3-dimensional curved shell walls

consists of two cores, which are both composed of an inner and an outer shell. They are connected by a ramp system. The body shell was developed on the basis of a 3D model whose implementation in 2D formwork drawings is only possible by means of a special system.

With more than 2,000 square meters of exhibition space, a state-of-the-art digital full-dome planetarium with 109 seats, meeting and workshop space, visitors can gain exciting insights into astronomy.

The ESO Supernova is a cooperation of the European Southern Observatory (ESO) with the Heidelberg Institute for Theoretical Studies (HITS) and a donation from the Klaus Tschira Foundation (KTS).



ESO Supernova ground floor of the close double-star system. Copyright Architekten Bernhardt und Partner

The ESO Headquarter

The planetarium is located adjacent to the ESO headquarters, itself an example of late expressionist design by Fehling and Gogel Architects from Berlin completed between 1976 and 1980. The concave and convex forms of the building illustrate the method of translating functional processes into exciting spaces.



View of the main entrance of ESO Headquarters with ESO Supernova next to it. Credit Claudia Neeser



Site plan of the facilities in relation to the ESO Headquarters in Garching bei München. Copyright Architekten Bernhardt und Partner

The administration building was extended in 2013 by an innovative new building by Auer and Weber Architects from Munich. Auer and Weber's design also uses the round shape, with the diameters of the office and assembly hall units referring to the diameters of the mirrors of the telescopes built by ESO in the Atacama Desert in Chile. The two newest buildings featuring innovative solutions to the problem of environmental sustainability.



View of the new addition of the ESO Headquarters by Auer and Weber. Credit Claudia Neeser

All three buildings, the ESO headquarter, the addition of the administration building as well as the ESO Supernova are unique architectural masterpieces.

Text by Claudia Neeser, Guiding Architects Munich

Sources:

<https://supernova.eso.org/about/?lang=en>

<https://supernova.eso.org/about/architecture/>

<http://www.auer-weber.de/en/projects/details/eso-headquarters-extension-garching.html>