

Architectural design of the new Mining Industry Study Centre receives commendation

Renate Steenberg

The University of Pretoria has received a commendation in the Architectural Category of the Steel Awards 2013 of the Southern African Institute of Steel Construction for the architectural design of its new Mining Industry Study Centre.

The centre was designed by ARC Architectural Consultants, who were also responsible for the design of the Engineering 3 Building and Parkade. The design utilised an additional 3 000 m² of previously unused space at street level beneath the Engineering 1 Building. This newly developed area consists mainly of a large arched roof and mezzanine floor and can accommodate approximately 800 students.

Steel was selected as the preferred structural medium to reduce the additional load that would be added to the existing building in order to undertake the revamp. The team used the principle of compression to limit the amount of additional weight, which ensured that a large portion of the roof's own weight would be transferred to the outer, and independent, pile foundations. The steel roof has spans up to 40 metres and covers an area of 1 700 m². Steel was also used as the primary structural element to support the mezzanine floors.

Steel can be rolled into large sections, which is why this material was used to create a visually aesthetic dome-type roof. This enhanced the overall appearance of the building, since most of the structural steelwork is visible to the public. The use of steel contributed to the aesthetic appearance and shape of the building and helped to achieve the desired appeal of the final building façade.

The benefit of steel is that sections can be fabricated off-site. As a result, much of the construction activity on site could be drastically reduced. This played a crucial role in the upgrading of the building. The risk of harming the natural environment and existing plants and trees was minimised due to the less intrusive nature of working with a steel construction.

The steel construction was completed on time and within budget, thus concluding the revamp on a positive note. The University is now equipped with a building that is not only complementary to the landscape, but also provides engineering students with a space in which they can develop their minds and creativity.

*Some information has been extracted from an article that appeared in *Steel Construction* 37(5), 2013. [+](#)

