

Mausoleum of Martyrdom for the Polish villages – Michniów

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In Poland, the mausoleum commemorating a mass murder of the entire village of Michniów and other Polish villages across the occupied country during the World War 2 is currently being constructed. The museum features a traditional village hut which gradually falls apart. Numerous offsets and inclined surfaces characterize the structure as well as the distinctive timber-like finish on concrete surfaces. PERI developed a formwork solution for the implementation whereby the number of special elements was kept to an absolute minimum.

The complex structure of the mausoleum symbolizes the interplay of architecture and history as presented through the gradual disintegration of the house hut. Thus, the museum has been bestowed as a symbol for past and future generations. The open arrangement of the museum will be exposed to the elements. Changes in the form along with the roof and wall inclinations show how the hut loses its shape and slowly crumbles, „until it is crushed into sand and gravel“. In order to realize this outstanding piece of architecture, the contractor looked for the most comprehensive and cost effective solution. Therefore, PERI engineers focused their attention in the planning phase on using rentable system formwork to the greatest possible extent.

Achieving the very special architecture

The TRIO panel formwork has proved to be the ideal solution for the steeply inclined sandwich walls with a thickness of up to 150 cm. The universally proven formwork system is uncomplicated and fast forming. To build the high, very often tilted reinforced concrete walls, TRIO standard elements of varying dimensions are connected, and if necessary, braced by diagonal supports. Only the BFD alignment coupler is required to extend the large sized formwork units to heights of up to 5.40 m. Moving the units in one piece with the crane is possible due to the circumferentially fitted struts.

The customized formwork concept also facilitates pouring the concrete roofs to a thickness of 80 cm. By combining VT 20 formwork girders with rentable SRU steel walers taken from the VARIOKIT engineering construction kit, roof pitches of 40° to 50° can be easily managed.

Together with SRU steel walers and SLS spindles, MULTIPROP shoring towers form the supporting structure for the roofs up to 15 m high. These load towers are characterized by their great flexibility and high load bearing capacity. An ideal solution for this project – the complex construction can be easily adapted to suit the variable height of the roof surfaces.

The routine handling with the proven TRIO panel formwork has allowed the construction team to work very quickly. Thanks to this big advantage, it has been possible to carry out the complex architecture extremely efficiently.

Unusual concrete surfaces

Another special feature of the building is that the walls and ceilings have a uniform timber like structure on the concrete surface. An unusual approach was adopted by the contractor to create the distinct texture. Due to a very complicated arrangement of the sandwich walls and inclined ceilings / slabs, combined with numerous installations passing through them, it was decided to create the timber like effect with a special plaster formed with roller stencils. The quality of concrete surface is thus crucial for the application and the final result. TRIO panels repeatedly deliver smooth and appropriately even surfaces which can be easily treated with the finishing touch.

Customized formwork solution with only a minimum of special formwork

The enormous offsets in the walls and roofs were a challenge for the construction team. PERI engineers planned the implementation of the complex architecture with a tailored combination of formwork and shoring – featuring a very small quantity of custom-made formwork. A thorough planning as well as the vast experience of the PERI team have been of great importance for the entire construction process. Through the professional collaboration and the technical support provided by PERI from an early stage of the architectural design to the completion of the concrete shell, the structure has been quickly and easily accomplished in spite of its complexity.

Source: PERI