



## Waterproofing the flat roof of a nursery in Stegaurach

### Bright and colourful environment for kids

Outdated, expensive and in need of considerable renovation work. What can be done? Faced with this situation, the operator of the Catholic nursery St. Marien in Stegaurach, Germany, decided against the 40-year-old building and in favour of a replacement newbuild. The newbuild was erected with the old wall structure on the existing floor slab. In November 2016, the nursery resumed operations at the old site.

After two years of construction, the kindergarten “St. Marien” opened in 1975. Over the years, it developed into a nursery for children aged 0 to 10 years. After 40 years, the building no longer met modern standards of energy efficiency, fire protection and comfort. In order to reduce the high energy costs sustainably, not only all the windows and the entire heating system would have had to be replaced. Insulation of the ceilings, floors and exterior walls as well as replacement of the old water pipes would have also been unavoidable. The costs of a complete refurbishment were about the same as a new building on the existing site.

### Replacement newbuild with a flat roof

The church, who maintains the kindergarten, decided in favour of a replacement newbuild at the old location, a residential area in Stegaurach near Bamberg, Germany. A low-rise building with a built-over area of approx. 1,500 m<sup>2</sup> was to be erected on the approx. 5,000 m<sup>2</sup> site. The contract was awarded to the architect/Dipl.-Ing. FH Thomas Schwerdtner, Bischberg. “The existing floor slab showed no damage whatsoever. It was thus possible to erect a replacement newbuild on this foundation without any problems,” Thomas Schwerdtner explains. “The floor plan was adapted to the previous building, as the generous room layout had proven its worth.

However, we have functionally supplemented the room layout with adjoining rooms, a larger kitchen and a new learning workshop for after-school care.” During the 18-month construction phase, the old building structure was removed down to the basement and concrete ceiling. An environmentally friendly heating system (brine-water heat pump), decentralised hot water preparation and a new ventilation system round off the building package. The modern, single-storey flat-roof building is a solid construction featuring highly insulating brickwork and windows with triple glazing.

### Good experience with KEMPEROL

The flat roof, which consists of sections with different inclinations built around a central atrium, was designed with consistent external drainage. When selecting the waterproofing material, the client decided in favour of KEMPEROL liquid applied waterproofing. Due to the small-scale structure of the drainage channels and the vast amount of connections and penetrations, safety was the top priority. In the Bamberg region, there are various reference buildings, also operated by the Catholic Church, whose roofs were waterproofed with KEMPEROL in the past. This good experience was once again the decisive factor for using the liquid applied waterproofing technology.

### Odourless for sensitive environments

Amschler Flachdachbau GmbH, Bamberg, was responsible for implementation. Master roofer Hagen Amschler has been a KEMPEROL contractor for many years. KEMPEROL 2K-PUR used is the sustainable top seller from KEMPER SYSTEM. The solvent-free and odourless product has been specially developed for use in sensitive environments. Since the nursery in Stegaurach is located in a densely populated residential area and the children were cared for daily in the immediate vicinity of the construction site, “chemical odours” were undesirable during the application process. The warm roof was constructed with 25 cm thick sloped insulation. KEMPEROL 2K-PUR was applied directly to the bituminous separating layer without any additional primer. A sealer is only necessary for absorbent substrates. In May/June 2016, the roofers waterproofed 1,350 m<sup>2</sup> of roof area plus 100 m<sup>2</sup> of foyer roof.

In addition, there were 300 m<sup>2</sup> of wall and parapet connections, numerous connections to various penetrations as well as to seventeen square and seven round skylight domes. Drainage channels had to be integrated into the surface waterproofing, too. Until completion of construction work, the approximately 150 children aged between 0 and 10 years moved to a container building right next to their new nursery. Every day they could witness development of the new-build. And it was well worth waiting for. The little ones have meanwhile moved into spacious, airy and light rooms with a homely atmosphere. The new nursery offers them a lot of space to play, romp around and learn.

## Project Data

### Project

Kindergarten; St. Marien,  
Stegaurach

### Task

about 1.750 m<sup>2</sup> replacement newbuild  
with a flat roof

### Orderer

Katholische Kirchenstiftung, Stegaurach

### Architect BDA

Schwerdtner Architekten, Bischberg

### System

KEMPEROL 2K-PUR water proofing  
KEMPER SYSTEM

### KEMPER SYSTEM processor

Amschler Flachdachbau GmbH

