



Rely on it.

When aesthetics and environmental consideration go hand-in-hand

RENOLIT ALKORPLAN Design and RENOLIT ALKORPLAN Solar



Childcare Center "De Kleine Wereld", Bruges

CHALLENGE

Day after day, De Kleine Wereld (The Small World), a building complex composed of 4 separate blocks, is buzzing with activity. Hardly surprising, since this Social Welfare building has been housing a childcare centre for many years. As the building was expanded with a modern new-build extension, it was decided to replace the roof of the existing building as well. After barely 10 years the weathered zinc roof with a solar panel installation was ready for refurbishment. It looked as if the carrier system for the PV panels on the zinc roof could not withstand the high wind load: the zinc had been torn off from roof structure. This resulted in moisture and condensation problems in the building below. Owner, Mintus, was looking for a **durable, waterproof and aesthetic solution for the curved roof, and, above all, a reliable system for installing photovoltaics.** For the architect it was important that the appearance of the existing metal roof was somehow preserved, preferably with a slightly more modern touch. In-addition there was an important practical issue as well: under no circumstances could the childcare facility be moved to another location during the refurbishment works. So, fire safety was paramount as well.

SOLUTION

Building owner, Mintus, finally opted for the mechanically fixed PVC-P roofing membrane **RENOLIT ALKORPLAN F.** The main and decisive reason behind this choice was the innovative **RENOLIT ALKORPLAN Solar** system, a secure, **ultralight and versatile carrier system for mounting photovoltaics.** **RENOLIT ALKORPLAN Solar** has been active on the market for over 10 years without the slightest issue. Direct proof of the reliability and durability of this unique **RENOLIT** system. For Mintus, the benefits were clear.

Additional advantages

And there is more! The **flexibility** of **RENOLIT ALKORPLAN** roofing membrane means it is easily applied to a curved roof, a really interesting benefit, particularly in combination with **RENOLIT Design** standing seam system. Furthermore a **B_{ROOF} designation** for pitched roofs and installation without naked flame played an important part in the decision. Quite obvious, given the use of the building is a childcare centre.

An eye for Design

To maintain the original metal appearance of the roof, Mrs. Tine Kindt, architect of the Technical Department of the City of Bruges, decided to have **RENOLIT ALKORPLAN Design** **standing seams** welded onto the lead grey roofing membrane. She decided upon a change from the original weathered copper green colour - which is also available in the **RENOLIT ALKORPLAN** range - as she wanted to give this project a more contemporary make-over. Keeping in line with the design of the adjacent new-build construction. The new zinc grey colour gives the building a modern appearance, yet safeguarding the classy metal look thanks to the Design standing seam profiles.



Roofing contractor Zolders Dakprojecten from Lummen was hired to carry out the roofing installation. The existing zinc roof was removed entirely. Then, 1.05 m wide **RENOLIT ALKORPLAN** roofing membrane was mechanically fixed to the timber deck. Thanks to its flexibility, this synthetic roofing membrane is perfectly suitable for this type of pitched roof shapes, including the finish of the gutters. Once the roof was made completely watertight, the extruded PVC-P Design profiles were hot air welded onto the membrane. Purely decorative, just a stylish extra touch with a nod to the past.



Mechanical fixing on timber with hot air welded seams



Curved roof shape



PVC finished gutter



RENOLIT ALKORPLAN Design profile



Secure and wind-tight

On the south-facing part of the roof, additional **RENOLIT ALKORPLAN** Solar profiles were installed adjacent to the Design profiles. Hot air welding is also used to fix the PVC-P **RENOLIT ALKORPLAN** Solar profiles, complete with aluminium box section, to the **RENOLIT ALKORPLAN** roofing membrane for a fully integrated finish. The top surface of the aluminium box section within the synthetic profile is used as a base to mechanically fasten the substructure for the solar panels. This 100% secure and waterproof system has been tested at wind speeds up to 200km/hour during wind tunnel tests at the Von Karman Institute. The system also has German DIBT and French Avis Technique Technical Approvals. **Absolutely wind-tight and durably waterproof!**

Throughout the entire period of the work, the facility provided childcare without any problem. When compared to a metal roof, the **vapour permeable** synthetic waterproofing membrane prevents condensation problems and noise from expansion and contraction. In addition noise from external elements such as rain or hail, will from now on be less intrusive and the children will have a quieter experience. Nothing but benefits!

For building owner Mintus, the environmental aspect of solar panels was a top priority. A priority that is entirely in line with **RENOLIT's** vision and constant search for environmental benefits and sustainable products.



REFURBISHMENT CHILDCARE CENTRE

- Bruges, Belgium
- Architect: Tine Kindt, technical Dpt. City of Bruges
- Building owner: Bruges' Welfare Association Mintus
- Roofing contractor: Zolders Dakwerken NV (ZDP), Lummen (B)

PRODUCTS

- **RENOLIT ALKORPLAN** F₃₅₂₇₆ 1.5 mm 73321 : 1.550 m²
- **RENOLIT ALKORPLAN** Design profiles 73321 Large size - 1.600 lm
- **RENOLIT ALKORPLAN** Solar profiles with aluminium box section 1035 lm
- **RENOLIT ALKORPLAN** Metal sheet