



The daycare centre is encased in a recyclable polycarbonate "envelope" | Photo source [Rodeca](#)

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RECYCLABLE PLASTIC SIDING PROVIDES HEAT AND LIGHT TO DAYCARE CENTRE

 PROPERTY & CONSTRUCTION

Nearly 80 per cent of the original building materials were reused in the renovation

Spotted: In the minds of many, “plastic” is the antithesis of “sustainable”. But if it is used in the right way, plastic can contribute to more sustainable building design. A light-filled daycare centre in Memmingen, Germany, provides an important example.

The design for the centre pairs floor-to-ceiling windows and doors, with an exterior of translucent polycarbonate panels. Made by siding experts Rodeca, these panels let light in throughout the building, which contributes to its passive heating capability. Previously exposed wings of the building are now enclosed, enabling more efficient energy use without the need for additional insulating materials.

Designed by architecture studio Heiler Geiger, the updated daycare centre is already achieving 2050 climate targets. By wrapping the garage, pool and residential area to incorporate them into a single, larger structure, the building retains its sense of airiness and spaciousness, thanks to the light-transferring panels. The panels are recyclable, and the interior of the centre showcases much of the original concrete and steel building materials.

Rodeca’s panels are meant to last for many years, thereby contributing to lower maintenance and replacement costs. Each panel is in either crystal or opal, and as each type filters light slightly differently, the mixture contributes to the aesthetic beauty of the new space, both inside and out.

Transparency is an impactful design element, providing both surprise and delight alongside more fundamental safety and structural purposes. A new [bicycle garage](#) in Sweden uses a glass-based

design to improve lighting and safety near a busy, previously fairly dark corner of a major transport hub. In Canada, a [translucent barn](#) improves wellbeing for the animals and their human caretakers.

Written by: Keely Khoury

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Email: post@heilergeiger.de

Website: heilergeiger.de

Takeaway:

It feels somewhat counterintuitive to consider plastic as a building material. However, when compared to traditional stone, steel and concrete designs, plastics can provide a much higher level of flexibility and adaptability of use. If repurposed plastics could be 3D printed and otherwise reused for commercial construction projects, the need for concrete would reduce, thereby helping to reduce carbon emissions while keeping waste out of waterways. As with many innovations, scale is one of the main challenges, yet it is something many organisations are working to surmount.