



CASE STUDY

DURSLEY TREEHOUSE

Built on a small plot in the centre of Dursley, England, this house was designed to have minimal impact on the surrounding trees and to preserve the natural habitat of the site. The Treehouse attracted much interest for its beautiful cantilevered structure, its low environmental impact and for the romanticism of living in a 'treehouse'.

The client was adamant that the impact of the house on its site should be very low and as environmentally sound as possible.

Reuse of galvanized steel components was a very important part of the project. 76 steel mesh flooring panels, that had already seen 20 years of use, were reclaimed from a local engine manufacturing company – the panels were cleaned and then galvanized to

form the main walkways around the house.

Balustrading for the walkways was initially specified as stainless steel, but after careful thought and consideration of costs, steel mesh sheep fencing was repurposed to create the infill panels within galvanized steel sections.

The spiral staircase was purchased for less than €200 from a scrap yard – having been used as a fire escape at a local store for the previous 15 years.

To continue the reuse theme, the first floor flooring is recycled slate from a local Rolls-Royce garage and second floor flooring is made from recycled beech wood from a local school gymnasium.

Above Left

Reuse of galvanized steel components was an important part of the project. Steel mesh flooring had already seen 20 years of use in a local company

Above Right

The staircase was previously used as a fire escape at a local store

The 27 protected trees posed a big constraint and dictated the location of the building within the site. In order to protect the tree roots, the ground had to remain untouched, therefore an elevated building was proposed.

This complex building has steel piles (avoiding tree roots) instead of concrete foundations. The main structure of the house is a double stud timber frame that sits on a steel structure which itself sits on screw piles designed to keep ground disturbance to a minimum.

Those galvanized steel screw piles are 10m long and are designed for future reuse.

The building achieved PassivHaus certification and adheres to the strict criteria for energy efficiency and thermal comfort to ensure that the heating is below 15kWh/m² per annum. The building also features thermodynamic solar panels and its own water supply reducing the carbon footprint further.



Image credits: Charles Hosea Photography Limited

Learn more about galvanized steel and the circular economy

The galvanizing industry is moving forwards - keeping galvanized steel at the forefront of solutions for tackling climate change and delivering the circular economy.

Galvanized steel can provide innovative solutions that optimise durability and facilitate circularity of steel structures and components. These solutions can be easily implemented using this well-established and simple method of protecting steel.

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