

Carbon Neutral Case Study Hurst Castle, Kayhaven

5,000 Tonnes of IKO Permaphalt Roofing Overhaul To Heritage Building

Project Description

Hurst Castle, situated in the Solent, originated in the 15th century and has undergone many additions and alterations up to it's last defensive role in WW2. Over 5000m² of Mastic Asphalt roofing was scheduled by English Heritage/ Historic England for an extensive overhaul. Throughout the project there was very close consultation with all agencies, local and national suppliers to achieve like for like replacement of the original makeup, adjusting plans at short notice as variations were uncovered. The work included a complete strip up and reinstatement of the East wing with concrete repairs to structural cracks and 150 tonne of sand and cement screed under 300 tonne of IKO Permaphalt. The West wing underwent extensive asphalt repairs throughout. The majority of work was carried out on a significant fall from 10%-20% on the gun emplacements, the asphalt detailing included upstands, downstands, vertical, capping, drips and gutters.

Challenges on this project came about due to the unique position of the castle, materials and waste were transported along a 1.5 mile gravel spit by tractor and were lifted on and off the roof by telehandler, including the three 2 tonne asphalt cookers which were used to prepare the IKO Permaphalt, personnel took the 20 minute ferry crossing to and from site daily.

The castle remained open to visitors throughout the project adding an extra planning element to the safe execution of this 6 month project. The site was well managed and an excellent H&S record maintained by the crew based there in liaison with the site agent. Due to the exposed nature of the site, weather conditions, including wind, rain, hail and extreme heat, were influential in progress and completion of the works.

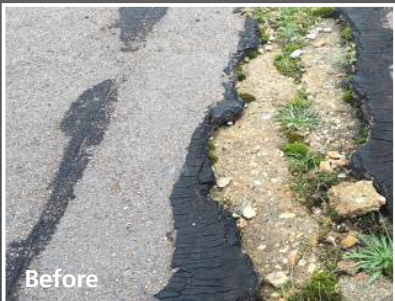
We are proud to say our works were completed safely, on time to a very high standard and to the delight of all parties concerned.



After



Before



Before

The net carbon footprint of this project is entirely offset using internationally approved carbon credits, which means for every tonne of Mastic Asphalt made, we are helping to fund environmental and humanitarian causes.

Impact Calculator: 200 Tonnes Mastic Asphalt = 31.2 Tonnes of CO² Offset

Impact Sector	Impact	Quantitative Data
Environment	Wood Saved	8 tonnes
	Area Protected	0.08 hectares
Social	Number of Stoves	3
	Total People Impacted	16
Economic	Working Time Saved	202 hours
	Working Days Equivalent	25 days
Health (likely reduced cases from project support)	Respiratory Illness (Lower Chest / Lung)	2
	Asthma	2
	Ear, Nose and Throat Irritation	1
	Total Reduced Instances of Serious Illness Attributed to Indoor Smoke	5

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Setting the Standard

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Location History

Hurst Castle is an English Heritage site and is situated at the seaward end of the shingle spit that extends 1.5 miles from Milford-On-Sea. The end of the spit is only three-quarters of a mile from the Isle of Wight and the views from the top of the Tudor castle are spectacular.

Hurst Castle was the perfect location to defend the western approach to the Solent. The castle was built by Henry VIII as one of a chain of coastal fortresses and was completed in 1544.

Charles I was imprisoned here in 1648 before being taken to London to his trial and execution.

The castle was modernised during the Napoleonic wars and again in the 1870's when the enormous armoured wings were constructed. Two of the huge 38-ton guns installed in the 1870's can be viewed in their casemates.

During World War II, Hurst was manned with coastal gun batteries and searchlights.

Carbon Zero: <http://www.co2balance.com/>

The data from the Impacts are based on the field work carried out by CO2balance within the project locations in Kenya and Uganda. The data that is gathered is in line with the requirements of the Gold Standard as part of the annual Monitoring. These Monitoring Reports are available on request. Data is then cross comparable against national averages in Kenya to ensure accuracy.

Assumptions and extrapolations have been used where relevant. The Health Data is derived from the following sources R. Perez-Padilla et al, 2010. 'Respiratory health effects of indoor air pollution' in International Journal of Tuberculosis and Lung Disease, vol. 14 no. 9, pp1079-1086. Kenya National Bureau of Statistics. (2008). Kenya Integrated Household Budget Survey.

Ministry of Planning and National Development, p1-300. 3 Wood saved and clean water supply - Calculations based on field measurements conducted by staff contracted to CO2balance and are conducted according to the requirements defined by the Gold Standard. Monitoring data is available on the Gold standard registry.

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