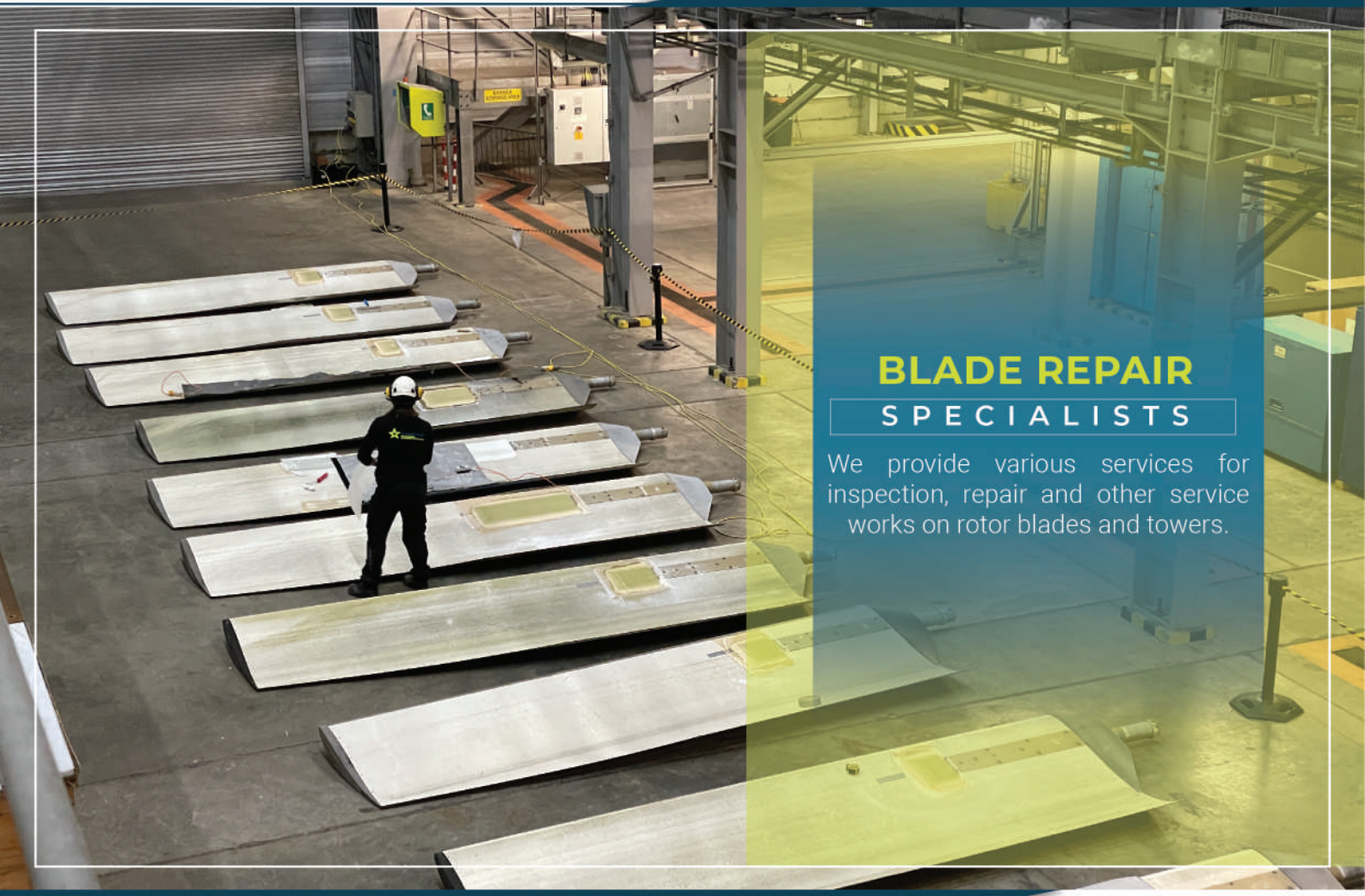
Bladestar
Renewables



BLADE REPAIR
SPECIALISTS

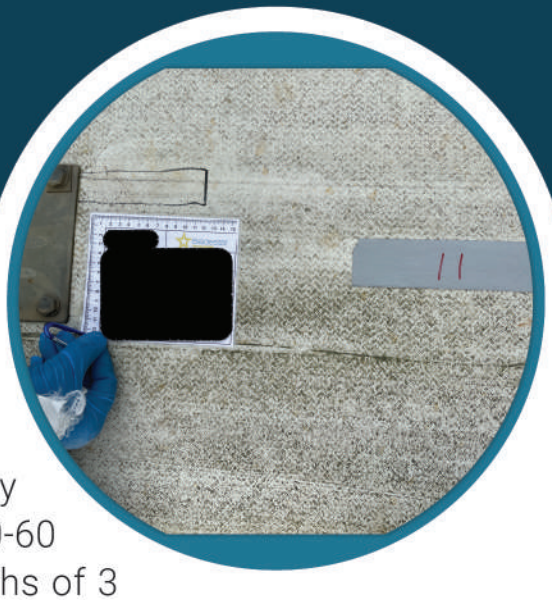
We provide various services for inspection, repair and other service works on rotor blades and towers.

Established in
2019

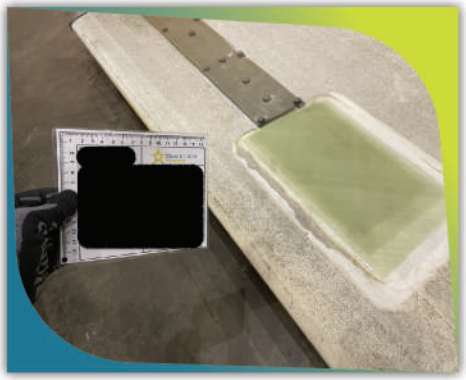
CASE STUDY
BROCHURE

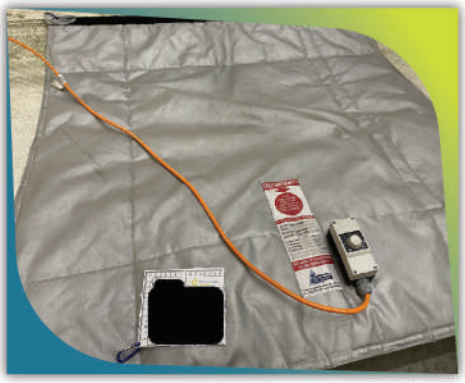
POWER STATION

Cooling Fan Blades – Industrial

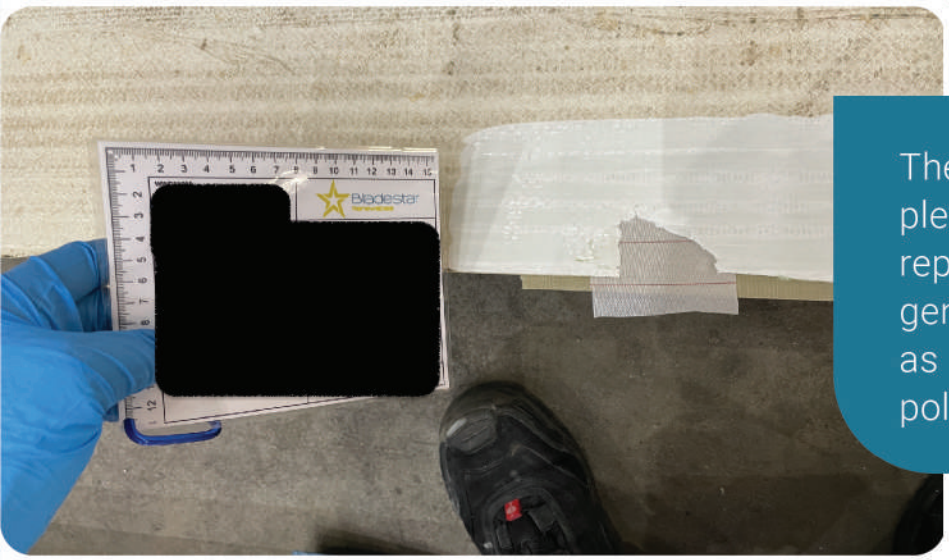


Bladestar Renewables Ltd were contacted by an Industrial Power Station about an issue that they had with some composite cooling fan blades. The blades were subjected to extreme forces given the unique way in which they start. The cooling fans would go from 0-60 rpm in less than a couple of seconds with blade lengths of 3 metres. With so much torque in the start-up process the blades were cracking under the strain.





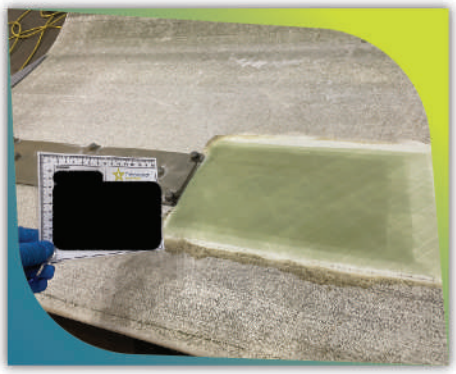
All blades had similar damages however they varied in size and depth. All pressure side cracks travelled span ways. There was also damage to the trailing edges of some of the blades which in turn would heavily disrupt airflow across the blade and create unwanted turbulence in the system. Upon inspection of the blades, the Bladestar technical team drafted up a repair strategy that would withstand the forces exerted on the blades at start-up.



The entire project took 5 days to complete the repair of x14 blades. The repair report for the damages were generated and uploaded to our server as per Bladestar 72 hour reporting policy.

All blades were going to need laminations just below the fixing plates. Some of the blades also required the trailing edge to be reinforced and reprofiled. All cracks were grinded out and the area was prepared for lamination. X3 layers of fiberglass were then laminated as a reinforcement. All cracks were also drilled out to dead end the crack and prevent any further propagation.

Once all laminations were complete they were heat treated to ensure structural integrity. The blades were fitted a couple weeks after the repairs. We have been in regular contact with the customer and are very happy with the results.



1 year on... All blades are healthy and have no new defects, all old defects were also contained during the repair process.

Bladestar Renewables

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