



Arnsdale
and
Silverdale
Area of Outstanding
Natural Beauty



Heron Corn Mill Hydro Scheme

Report by

MANNPOWER

CONSULTING LIMITED





Power Output

- Maximum output is 83kW
- Average output over a year is 62% or 52kW.
- Average UK household uses 0.38kW.
- This scheme provides for the average needs of $52 \div 0.38 = 137$ homes
- Provides for all the electricity required for the houses in Beetham and Slack Head.



Scheme benefits

- Provides a reliable future annual net income of at least £30,000
- Sustainable future for the mill
- 196 tonnes of CO2 emissions saved
- Old and new forms of waterpower juxtaposition – an interesting visitor attraction.
- Educational demonstration of best practice



Advantages

- Varying water heads and varying water flow rates upstream and downstream of the screw only marginally affect the efficiency and have no effect on the function or operation of the Archimedean screw.
- Neither dry running nor solid particles in the water flow harm the Archimedean screw.
- The availability of a power plant using Archimedean screws is much higher than a turbine power plant.



- Archimedean screws require much less underground digging in the outlet area compared with small turbines. They can therefore be constructed with little effort and with minimum environmental disturbance.
- The generator and the gear-box of Archimedean screws are situated above the upstream water level, while the generators for turbines are built under water level and have to be waterproof.

