



SPECIFICATION
AND
TENDER
FOR

PROPOSED HYDRO-ELECTRIC PLANT AT THE

MILL HOUSE, DUMBLETON, NR. EVESHAM.

From

BOOTH & BOMFORD, Ltd.,

Electrical Engineers,

EVESHAM.

ALSO AT WORCESTER, BROADWAY, CAMPDEN, CARDIFF, Etc.

TENDER.

Telephone:-
298 EVESHAM



BOOTH & BOMFORD LTD.

ELECTRICAL ENGINEERS



Contractors to
THE ADMIRALTY,
H.M. OFFICE of WORKS,
POST OFFICE,
RAILWAYS,
ETC-ETC

JGB/MS

99, Port Street,
EVESHAM.

18th May 1938

(ALSO AT COVENTRY & CARDIFF)

R.M. Pyke Nott Esq.,
Dumbleton Estate Offices,
Nr. Evesham.

re Proposed Hydro-electric Plant
at Mill House, Dumbleton.

Dear Sir,

We have now received from Messrs Gilbert Gilkes & Gordon Ltd., the enclosed report following the visit of their engineer Mr. Maryon to the site when we met you and when Mr. Maryon carried out a careful investigation of the local conditions, water flow etc.

From this report you will observe that under present conditions with the old water wheel in use, a $2\frac{1}{2}$ kw plant running direct without batteries is recommended which will provide ample supply for lighting with a margin for small domestic appliances such as vacuum cleaners, kettles, toasters, irons etc.

If the regular use of the water wheel is not required, then the larger $4\frac{1}{2}$ kw plant is recommended and this would give a sufficient margin to permit the use of one of the new type "Storage" electric cooker or alternatively a limited number of electric fires. The average size of electric fire is 2 kw but, of course, it is seldom necessary to keep this switched full on for more than a short period. Assuming, therefore, that about 1 kw is required for lighting which we think would be the average there would be a margin of 3 kw for either cooker or electric fires.

You will observe from the closing remarks in the report that Messrs Gilkes & Gordon Ltd., suggest that after you have had an opportunity of considering the schemes and deciding which will suit your requirements they will prepare a fully detailed specification if required but in the meantime we give you below their outline specification and estimate for the two sizes of plant with alternative Vee-rope drive and direct coupling in each case as follows:-

Scheme (A). $2\frac{1}{2}$ k.w. plant.

One $7\frac{1}{2}$ " diameter Series "C" Gilkes Francis Vertical Shaft Turbine, designed to develop 5.19 B.H.P. on 13 feet working fall, using 291 cu.ft of water per minute, normal speed 637 R.P.M.

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The turbine enclosed in cast iron spiral case, having 13" bore flanged inlet branch. The turbine provided with movable guide vanes arranged for automatic control, above water suspension bearing and shaft extension to accommodate driving pulley etc.

Tapered Suction Pipe, about 6 feet long.

Two rolled Steel Foundation Beams for turbine floor.

Two Rolled Steel Joists for above water suspension bearing, etc.

One No. 1. Oil Pressure Governor with vertical drive, pulleys, belt, connections and oil.

Steel Plate Flywheel mounted on Generator.

One Special Vertical Spindle type Compound Wound D.C. Generator, with special extended skirt base to accommodate vee rope pulley and flywheel. Designed for $2\frac{1}{2}$ k.w. at 230 volts, 1,200 R.P.M. Slide rails and back-of-board shunt regulator.

Vee Rope Drive between turbine shaft and generator.

Cast Iron Strainer to cover an area of 30 square feet.

Set of Iron Lifting Gear for timber sluice. Timber work not included.

Steel Flanged Inlet Piping, 15" bore as shown on Drawing No. A.8077 herewith.

Skilled Erection including the services of one mechanic, the customer providing the necessary labouring assistance. It is assumed that the foundations would be prepared previous to our man's arrival on the ground.

PRICES.

- (1) As described above £555 (Five hundred and fifty-five pounds)
- (2) Alternatively if the above plant is constructed with a direct coupled generator, the total cost generally as specified above would be £579. 10. 0 (Five hundred & seventy-nine pounds, ten shillings)

Scheme (B). $4\frac{1}{2}$ k.w. Plant.

One 9" diameter Series "C" Gilkes Francis Vertical Shaft Turbine, designed to develop 8.15 B.H.P. on 13 feet working fall, using 437 cu.ft of water per minute, normal speed 531 R.P.M.

Generally as specified under "A".

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One No. 1 Oil Pressure Governor with vertical drive, pulleys, belt, connections and oil.

Steel Plate Flywheel mounted on generator.

Generator as specified under (A). Designed for $4\frac{1}{2}$ k.w. 1,200 R.P.M.

Vee Rope Drive between turbine shaft and generator.

Cast Iron Strainer to cover an area of 40 sq.feet.

Set of Iron Lifting Gear for timber sluice.

Steel Elanged Inlet Piping, 18" bore.

Skilled erection as specified under "A".

PRICES.

- (1) As described above £647 (Six Hundred and fortyseven pounds)
- (2) Alternatively if the above $4\frac{1}{2}$ k.w. plant is constructed with a direct coupled generator, the total cost generally as specified above would be £690. 10. 0 (Six hundred & ninety pounds & ten shillings)

The above prices include for delivery to nearest station and it is assumed you would arrange transport to site.

You will observe that building work is excluded and it is assumed that you will provide the necessary rough labour required for assisting Messrs Gilkes & Gordons Erectors.

Any of the plants offered above could be constructed complete ready for despatch in 8 to 10 working weeks after receipt of order with full particulars. Conditions of contract as per printed conditions of Sale "B" attached.

Main switch-board & main cables to house.

Messrs Gilkes & Gordons specification and quotation does not include these items and we, therefore, have pleasure in quoting as follows:-

 $2\frac{1}{2}$ k.w. Plant.

Supplying and fixing in position shown on enclosed drawing suitable main control switch-board comprising enamel slate panel mounted on iron frame complete with the following instruments and switch gear.

Ammeter.

Voltmeter.

Double pole main control switch & fuses.
Mounting of shunt regulator included in plant quotation above.

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Main cables to house consisting of run of two 7/044 single Tough Rubber Sheathed cables on insulators from main switch board along outside wall of Mill to gable end facing house. Thence overhead with P.B.J. weather-proof cable on insulators including supplying 25ft Creosoted pole to be erected in centre of orchard (you to provide rough labour for excavation). Overhead cable terminated at insulators on end of house and continued with similar Tough Rubber Sheathed Cables to position of main control switch over back entrance door.

It is assumed that it will be satisfactory for the overhead main cable to pass in a straight line from the Mill to the house through the orchard.

Our price for carrying out the above described work would be the sum of £39. 10. 0.
(Thirty nine pounds and ten shillings)

4½ K.w. Plant.

The cost of the above main switch board and main cable to house of larger size suitable for the larger capacity plant but otherwise as specified above would be £44. 10. 0. (Forty four pounds and ten shillings)

General.

The whole of the prices quoted are based on present cost of materials and labour and would be subject to increase in the event of rise in prices before the order is placed.

We trust that you will be kind enough to give this matter your careful consideration and will then give us the opportunity of discussing same in further detail with you.

Assuring you of our best services.

We are,

Yours faithfully,
for BOOTH & BOMFORD LTD.

J. Bomford
Director.