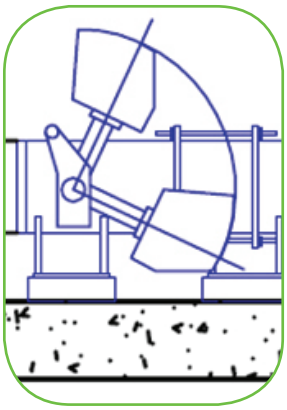
CASE STUDY – HYDRO STORAGE

KEY DATA

- Turbine 100 kW Pelton from Newmills Engineering
- Head 220m Gross Head
- Maximum flow 58 litres/s
- Predicted date of first generation January 2014
- Annual Electricity production 484 MWh



SCATWELL LODGE HYDRO SCHEME
CLIENT: PACKINGTON ESTATE ENTERPRISES

Scatwell Lodge Hydro Scheme is located in the hills of Strathconon in the Highlands .

Green Cat Renewables undertook the initial site identification, feasibility assessment, environmental assessment, planning support, CAR Licence application, detailed design, procurement and project management.

The scheme has now obtained all of the necessary consents, and secured a grid connection at a viable cost. Construction is due to commence in April 2013, and is planned to complete in 8 months.

The key elements of this project are:

INTAKE STRUCTURE
The intake structure is being formed within an existing 19th century stone dam on the estate. Provision was necessary to provide a sophisticated variable by pass flow during fish migration season in the Autumn, to satisfy SEPA consenting requirements.

PENSTOCK
The chosen penstock design comprises 1900m of 0.3m external diameter continuously welded polyethylene pipe.

TURBINE SELECTION
The availability of the particularly high head of 220m on this scheme enables the use of the efficient and compact Pelton type turbine.

STORAGE
The availability of storage for this scheme in the existing Loch a'Mhuilinn reservoir will enable a productivity than would otherwise be available, using water collected after periods of high rainfall.

DOMESTIC WATER SUPPLY
The development of the project has also enabled the upgrade of the private water supply on the estate, which serves 25 properties in the glen.

Their supply has until now been provided from an intake on a hillside stream, which could dry up in the summer.

From January the water supply will be taken directly from the hydro scheme, and will provide an increase in security of supply.