

Mark Sealy, Brithdir Forest Hydro. Intake: Front Elevations, Levels and Take Calculations

Item	Level mAOD
Crest	313.707
Base of Screen	313.255
Existing water level 6m upstream	313.862
Downstream water level	312.329
X1	317.649
X4	316.043
X6	315.440
X5	314.785

Take

Total Crest Width : 2020mm + 866mm = 2886mm
 Screen Width : 2020mm
 Take : 2020/2886 = 70%

Hands-off-flow

Calculation of flow over broad crested rectangular broad notch:

Discharge coefficient, $C_d = 1.6$

Notch depth, $h = 0.097\text{m}$

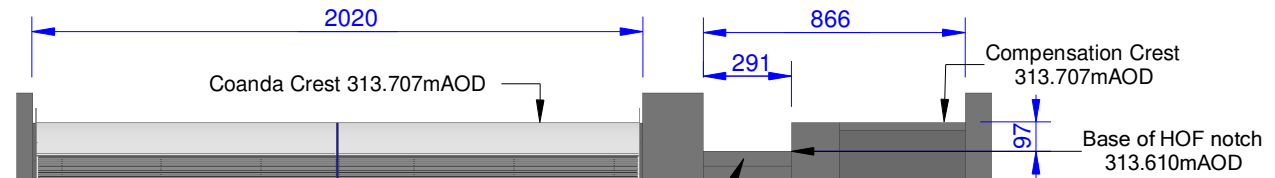
Notch width, $w = 0.291\text{m}$

$$Q = C_d * w * h^{1.5}$$

$$= 1.6 * 0.291 * 0.097^{1.5}$$

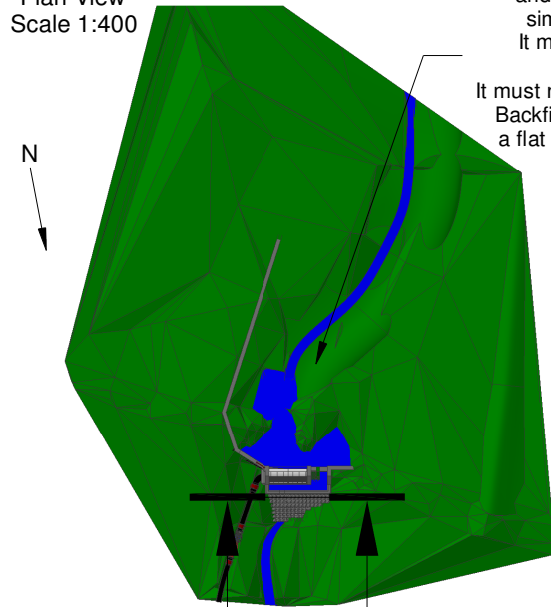
$$= 0.01407 \text{ m}^3 / \text{sec}$$

$$= 14.07 \text{ lps}$$



The impoundment is to be pre-filled with gravel and cobble sized material (size mix similar to that found in the reach). It must be chemically inert or similar to that already in the reach. It must not be derived from the watercourse. Backfill to within 100mm of the crest with a flat backfill of the entire impoundment.

Plan View
 Scale 1:400



N

0 500 1000mm

Concrete weir and wing walls. Wing walls designed to contain estimated 100 yr flood

Stainless steel Coanda screen 1.3mm spacing

Rocky Ramp downstream of fishpool

Section A-A
 Scale 1:50

All dimensions in mm.

Eel substrate passes up and over crest to the side of the HOF notch
 Strip of polycarbonate bolted to side of ramp to ensure water retained over full length
 No eel substrate immediately below notch to allow nappe to be aerated

Client : Mark Sealy
 Address : Brithdir Forest Hydro,
 Brithdir, Dolgellau, LL40 2SA
 Drawn By : MJP

Date : 08/03/23
 Scale : 1 : 25 @ A4
 Drawing No : 23030801
 Version : 2

Revision Details
 v2: Filling of impoundment

Greenearth
 Hydro

Greenearth Hydro Limited
 The Cottage, Rhiw, Pwllheli, LL53 8AE
 Tel: 07980 670046 www.greenearthhydro.co.uk
 Company Registration Number 7417466
 MCS Hydro Transition Installer 123