

# ROSEMANOWES FACTS

Avalon Sciences has acquired the ABB Offshore System borehole facility at Rosemanowes Quarry, Penryn in Cornwall. The acquisition of the quarry will allow Avalon Sciences to carry out testing of borehole equipment within a controlled environment. This will give Avalon an easier means of testing equipment replicating real onsite conditions, allowing us to provide a better understanding of problems that may develop in other locations.

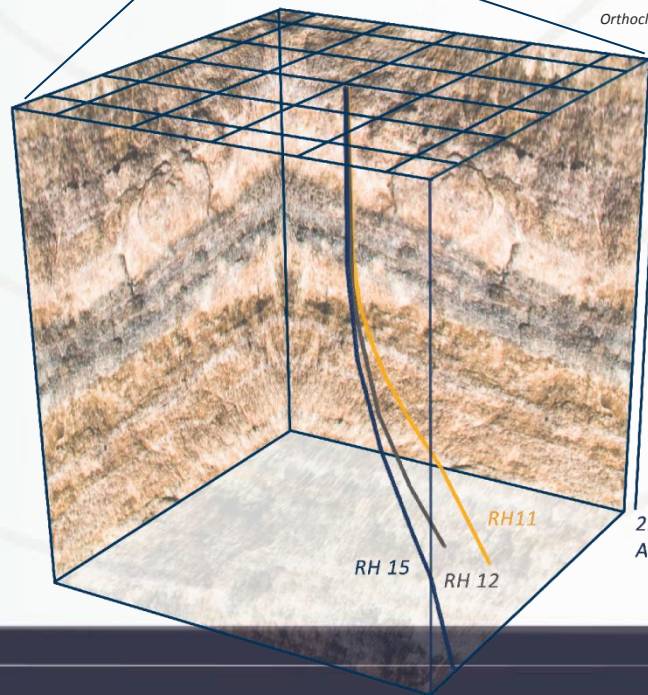
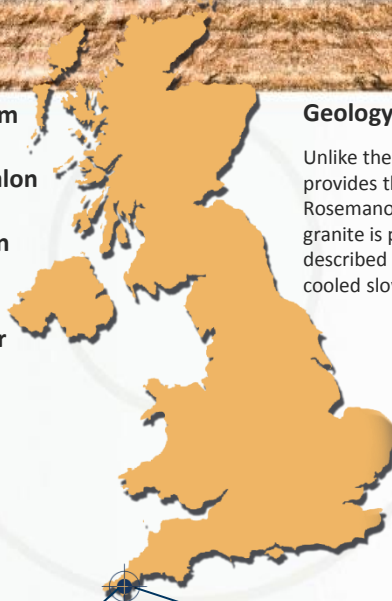
## Quarry History:

The quarry was a UK Hot Dry Rock Geothermal Energy Research site, offering access to one of the most comprehensively logged well systems in the world. The boreholes are located within a fresh water filled granite environment. The quarry was the first deep geothermal project within the UK starting in 1977. The aims of the project were:

- 1) To see if hot dry rock could be fractured by water pressure alone (Achieved).
- 2) To find out if the rock was hot enough to make steam for turbine generation (Not achieved at the depths attained).

The project concluded in 1991, but studies continued until 1997.

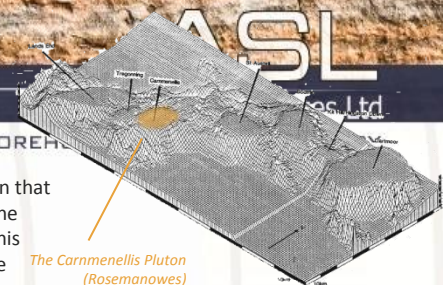
In 2006 the quarry was used as a deep borehole test facility, making the quarry the best logged site in the world. The Quarry was purchased by ASL in 2013.



## Geology Rocks:

Unlike the sedimentary marine Blue Lias limestone formation that provides the foundation strata of the ASL HQ in Somerton, the Rosemanowes quarry is dominated by an igneous granite. This granite is part of the Great Cornubian Batholith which can be described as a large emplacement of intrusive rock which has cooled slowly deep within the crust.

## LEADERS IN BOREHOLE



The Carnmenellis Pluton (Rosemanowes)

The Cornubian Batholith of Devon and Cornwall

## So what is this deep crustal rock doing at Rosemanowes!?

During the late Palaeozoic ~280Mya two ancient continental plates crashed together to form the super continent 'Pangaea'. This caused a huge mountain building event known as the Variscan Orogeny. As deep rock formations were thrust up, so were the deeper intrusive granites of the Cornubian Batholith. These rocks are known as 'Plutons' and define much of the Cornish and Devonshire landscape wherever they outcrop - Dartmoor, Bodmin, St. Austell, Land's End and Carnmenellis.

Biotite Mica (Black)

Muscovite Mica (Metallic white)

Orthoclase



Carnmenellis Granite (3mm across)

The Carnmenellis Granite is described as a 'Two Mica' granite. The granite experiences natural radiation caused by Zircon within biotite mica grains. This gives the rock the property of a 'high heat flow', which is valued in geothermal exploration.

## Borehole Test Facility

The quarry consists of:  
x3 Deep Boreholes

Well id	Casing	Measured Depth
<b>RH 11</b>	9 5/8" OD	2356m/7730'
<b>RH 12</b>	9 5/8" OD	2180m/7150'
<b>RH 15</b>	9 5/8" OD	2566m/8420'

- x1 - open hole section inclined at 30 degrees
- x4 - 300m MD boreholes with 6" casing @20m
- x1 - 150m MD 8 1/2" uncased borehole inclined at 30 degrees.