



The Newt Pond

The Newt Pond is one of the remaining habitats for the endangered Great Crested Newt. During the building of the Jennie Lee Building, great care was taken to preserve and protect these creatures, with the erection of a newt proof membrane around the pond to isolate it from the machinery and construction workings.

The area next to the Newt Pond has been landscaped to reflect the south-facing aspect of that part of the building, as an arid and sunny environment, and planted up with drought-tolerant plant species. Shingle reduces moisture loss from the soil, and small plastic tunnels have been constructed under the ground to provide shelter and breeding places for the Great Crested Newts.

The Flat Roof

The flat roof is an architectural feature built by the same company who built the Eden Project in Cornwall, and using similar techniques. It is a cheap and environmentally friendly way to have a transparent roof that does not lose a lot of heat.

It is constructed from ETFE pillows that act like plastic bags. Two sheets are inflated and trap still air. Provided it does not move, air is a good insulating material.

Infrared Irradiance

Measured in W/m^2 , this shows the amount of heat, (infra red irradiance) radiating from a surface. The sensor measures the difference between the devices internal sensor (near the handle) and the surface it is pointing at. So if your hand is warm and its a cold day, you may get a negative reading.

Readings vary between warm and cold days because:

- The building surface may have stored heat earlier and be radiating it.
- It may be warm inside the building and heat is passing through the surface.
- Heat from the sun may be reflected from the building surface.

Readings will vary as the wind blows because of the air movement. On a cold day the irradiance reading drops quickly. But what happens on a warm day?

JENNIE LEE BUILDING

Built 2008





DESIGNED TO BE ENVIRONMENTALLY FRIENDLY

Three main types of glass

The Jennie Lee Building appears to be constructed entirely of glass, but this is not the case. The building is built of steel clad in concrete, with different types of glass forming the walls. Three main types of glass were used for the body of the building:

Clear or Opaque glass

Clear glass windows are triple-glazed. This is the least efficient at preventing heat transfer and you will see this if you measure the irradiance reading on the sunny side.

Opaque glass is made of the same material as the clear, but with an opaque coating on the inside of the innermost layer. You might want to check how the performance of this class compares to that of clear glass.

Coloured glass

Coloured glass is of a different composition to the clear glass in order to take on the different colours. The colours mean that the glass absorbs and therefore radiates more heat. This is evident on both the shady and sunny sides of the building.

JLB South IR Readings – Sunny day		
Glass type	IR	Air Temp
Clear	-0.4	16.6
Orange	1.0	16.6
Pink	1.2	16.6
Yellow	1.2	16.6
Spotty	2.2	16.6

JLB North iR Readings – Sunny day		
Glass type	IR	Air Temp
Clear	-9.4	15.8
Orange	-7.6	15.8
Pink	-7.6	15.8
Yellow	-7.2	15.8
Spotty	-8.2	15.8

Spotty Glass

The spotty glass is, in fact, a triple glazed front to deep panels containing insulation. This is passive insulation, that is, it stops heat transferring across a gradient – rather like a thermos flask. So, if it is cold outside and warm inside, it prevents heat loss. If it is hot outside and warm inside it keeps the cool temperatures inside.

