

Earth sheltered buildings

There are three architecturally stunning earth sheltered buildings in Mile End Park – the Arts pavilion, the Ecology Centre and the Childrens Centre.

The buildings are designed to be as energy efficient possible by utilizing the technique developed in the Rocky Mountains Research Centre - A passive annual heat storage system (PAHS).

The buildings have been designed with an insulation umbrella that extends beyond the walls and floor of the building envelope. The umbrella is made up of polystyrene and polythene to create a dry thermal heat store to collect heat created by the buildings occupants, lights, equipment and directly from the sun.

One of the main heating inputs is from solar gain (heat from the sun) which enters through large glazed areas. The windows are double glazed and gas (Argon) filled with one low emissivity coating. External shutters can be used to further reduce heat loss at night and provide a security barrier.

It is possible to eliminate heating systems in most PAHS buildings because of the heat storage system. However, given the fluctuating occupation patterns of the buildings a simple underfloor heating system has been installed.

Most rooms within the buildings are provided with natural ventilation and natural lighting via roof lights.

As well as being innovative, cheap to run and stunning to look at, the Earth Sheltered Buildings were also chosen to help to help overcome the planning restrictions for constructing buildings on Metropolitan Open Land.

All parks require water for irrigation, water features and building use. Within the park all aspects of water usage have been designed to reduce usage the lowest acceptable level.