

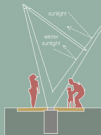
Construction

The Observatory project provides a one-off opportunity to create a valuable day and night-time resource in a unique location. This design proposal recognises the implicit obligations to optimise the budget and exceed the requirements of the design brief. Underlying the sculptural aesthetic of the proposal is a simple, robust and economic constructional approach that balances environmental sensibilities with modern technologies.

The remote location of the site means that the most effective strategic way of containing costs and maximising accommodation is to construct the Observatory structures off-site.

The proposed design "touches the earth lightly", limiting its permanent footprint to a total of five pad foundations that can be installed at the same time as the access road, car parking and footpaths.

The various structures would be brought onto site in manageable segments - pre-serviced, tested and commissioned - and installed in a very short time period. This virtually eliminates many of the risks associated with a construction project and keeps the number of construction processes and trades to a minimum.



Elevation of Daylight observatory

Daylight Observatory

This simple structure is fabricated from standard steel components cut to size, bolted together and fixed to a single pad foundation. The gnomon has a mirror polished, stainless steel upper face to reflect the sun's rays onto the dial. The dial itself is formed from a steel circular section shaped and held in tension by the gnomon in an equatorial position.

Warm Room

The Warm Room is the only "habitable" structure in the complex. It is fabricated from a lightweight steel frame supporting an insulated, stainless steel clad shell. All servicing requirements are housed within or on the structure to minimise on-site connections. Photovoltaic cells on the angled south face and the adjustable "panels" gather solar energy efficiently, to be stored in the underfloor batteries. A backup generator is housed in the plant room.

Telescope Housings

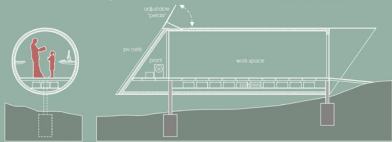
These highly functional structures are fabricated from lightweight steel frames that use the inherent stability of a spherical shape. They are supported directly on the foundations, independently from the telescope mounts. The cladding is polished stainless steel, formed using segmented single curves for ease and economy of construction. The structure would be fabricated in four quarters and brought onto site for final assembly.



Cross section of Meade telescope



Plan of Daylight observatory



Cross section and Long section of Warm Room