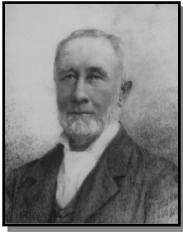


# McClellan Telescope and Dome

## Frank McClean



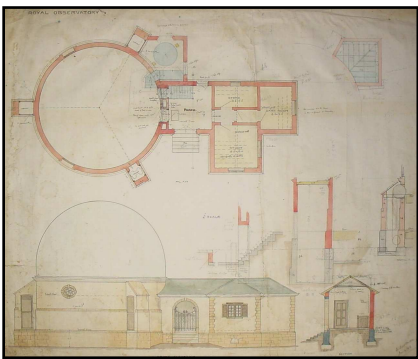
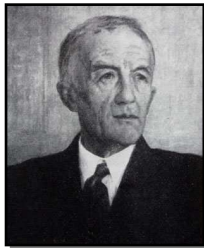
Frank McClean FRS (1837-1904) was a wealthy engineer who retired in 1870 to devote himself to astronomy.

He was a friend of Sir David Gill, HM Astronomer, and worked for a while at the Royal Observatory, where he discovered the presence of oxygen in stars.

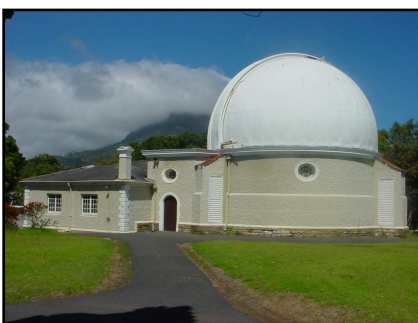
Gill had wanted to become involved in the rising science of astrophysics but the Admiralty would not finance this. McClean came to his rescue with this telescope and dome.

## Architecture

Herbert Baker, the famous imperial architect, designed the building and Howard Grubb of Dublin built the telescope.

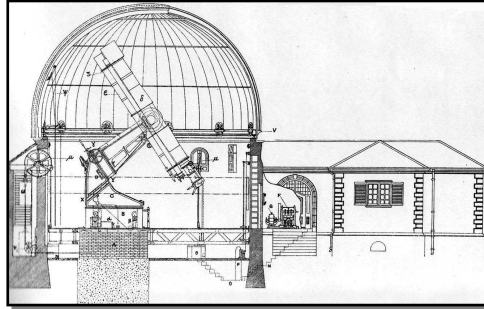


Herbert Baker's plan, dated 1896



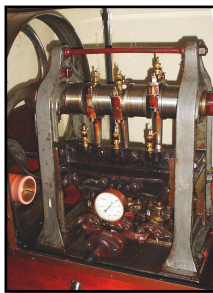
General view of building today

## The Building



Cross-section of the building and dome

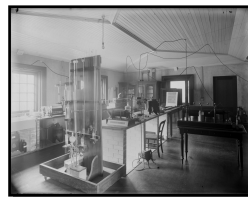
## Rising Floor



The building included every modern convenience, such as a hydraulically-operated rising floor and mechanical dome rotation. The hydraulic pump is on the left and the DC motor that drove it is on the right.

## The Spectroscopic Laboratory

This, the first spectroscopic laboratory in South Africa, was used for examining earthly substances that might also be present in the stars.



## Public Outreach



The present use of the McClellan telescope is in public outreach. Visitors number several thousand per year on open nights and other occasions.

## The Telescope



The mount actually carries four telescopes. The largest, the 24-inch (61cm) is designed for photography in blue light and the 18-inch (46cm) and the 8-in (20cm) guider are for visible light. The box-section telescope (not visible in photo) is known as the "Old Astrometric Camera"

## Photographic Darkroom

Photography was the main detection technique with this telescope. The building contains a darkroom



## Objective Prism



This "objective prism" fitted over the 24-inch lens and spread the star images out into spectra.

The plate below shows the region of the emission-line star Eta Carinae around 1901, taken with the prism in place.

