The present station building was erected in 1883, and replaced the wooden and corrugated iron structure built in 1870, when the railway finally reached Burra.

The original arched roof over the tracks and platforms was retained at this time, but later demolished in 1935. The cast iron water tank and the water columns are adjacent to the station building.

The opening of the railway from Roseworthy to Burra in 1870, culminated a series of proposals that finally linked the copper mining town with its ultimate shipping point (Port Adelaide). It unfortunately also coincided with a decline in productivity and world copper prices. Despite desperate attempts, such as open-cut mining, to revive the Burra Mine, it finally closed in 1877.

The railway line, known as the Northern Extension Railway, was built in two sections, from Roseworthy to Forresters, and from Forresters to Burra.

Work on the Burra end of the line started in 1865, with five contracts let for earthworks along its length. The Burra terminal section was let last, because of indecision about the site of the station.

Known for some years as the Aberdeen Station, the Burra Station was eventually located near the Bon Accord Mine, and was opened on 29 August 1870.

More than 3 000 people attended the opening, which involved the arrival of two trains from Adelaide, one of which carried the Governor, Sir James Fergusson. After the opening, the guests were entertained at a luncheon in the decorated goods shed, followed by a concert, and a ball later in the evening.

Economy had been the keynote for buildings constructed along the line, hence the use of timber and corrugated iron for the station.

By 1883 the wooden building at Burra proved inadequate for the large numbers of passengers passing through the station. This new Victorian-style station, complete with refreshment rooms, was built by October of that year.

The refreshment rooms were closed on 1 July 1936.