In 1838 a preaching room was opened at Waterbarn, by the year 1846 it was decided to build a chapel at Waterbarn, £500 being promised at one meeting held at Irwell Terrace for the purpose. The total cost of the chapel was £1,900 and in 1848 the Orchard Hill chapel was opened. For eight years the Orchard Hill church worshipped in the one storey meeting house. At the beginning there was just a handful of people and only 40 children in the Sunday school. Once a fortnight Thomas Dawson came from Bacup on a weeknight to conduct a preaching service. The alternate week being filled by a prayer meeting and on Sundays, school in the morning an afternoon service and one in the evening. So crowded did the meeting house become that to build a new chapel was imperative.

The total cost was close to £2,000 and the first services in the new building were held on Christmas Day 1847. Though the official opening was deferred until three months later. The new chapel was a square box-shaped building only half the length of the church we know today. It had gallery's all around and a singing pew in front of the pulpit. One of the local preachers being Robert o’th Moss one of the Deign Laycock's. In 1848 the Rev George Taylor accepted the office of co-pastor of Irwell Terrace with special charge of work at Waterbarn. When he left after three years he was succeeded by the Rev John Howe, of Crewkerne in Somerset. Rev Howe ministered at Waterbarn for 36 years, leaving in 1887. He was well-liked by the congregation dressed in his traditional black frock coat and white bow tie he went about his people, delighting as some remembered and noted to visit on baking day and refresh himself with a cup of tea and a muffin.

Fellow workers of John Howe were Samuel Howorth and James Cox. Samuel Howorth being one of the founders of the church and Sunday school. James Cox was a printer and bookseller who came to Stacksteads from Haddenham in Cambridge about 1848. A great educationalist he commenced a day school at Waterbarn which lasted for 25 years. James Cox was also a superintendent in the Sunday School, for thirty years secretary of the Rossendale Sunday School Union, and an ardent Temperance Reformer, a man of vision and great enthusiasm, a lover of all good causes. Others in the great succession who laboured at Waterbarn during John Howe's ministry and afterwards, and who are
remembered are - John Taylor, a man of deep spirituality and piety; Henry Ashworth, Henry Barcroft, William Sellers, Henry Howorth, who lived at Cowpe and "-would always take the prayer meeting if they would put him down for a moonlight night," William Newell, who held many offices including that of church secretary for twenty-three years, Thomas Howorth, Richard Horrocks, Thomas Crabtree, George Eastwood and Robert Cormack, whose pen name "Skylark" recalls both the joy fullness of his Christian life and his reputation as a Lancashire poet. In 1857 Waterbarn broke away from its mother church Irwell Baptist and in 1868 a new enlarged chapel was opened.

With a large two-storied school having been built behind the church. John Howe's successor was the Rev S.R.Aldridge, B.A., L.L.D., who had just concluded his ministry at West Street, Rochdale. Dr Aldridge resigned in 1894 and the church was without a minister until 1897 when the Rev Alfred Stock, B.A., B.D, was called to the pastorate. During his ministry the church continued happy and prosperous with 317 members and 650 scholars in the Sunday school taught by 64 teachers taking lessons in turn. The day school was taken over by the Bacup board school in 1893 but all other sections of the churches life was flourishing. In 1898 the Sunday school was graded into three departments Primary, Junior and Senior. In 1907 Alfred Stocks left Waterbarn to become the minister at Barnsley.