

## BBC CRYSTAL PALACE INFORMATION SHEET

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### GENERAL

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BBC Crystal Palace Transmitting Station opened 28th March 1956 replacing the transmitter at Alexandra Palace which had started the world's first high definition TV service in November 1936.

The original service on 405 lines in channel 1 (45MHz) was radiated from a temporary 235ft mast (ex Glencairn, N.I.) sited on the reservoir until the permanent tower was completed; this had been delayed due to a Government requirement to share with the newly-formed ITA (now IBA).

Various experimental transmissions at UHF (both 405 & 625 lines and various colour systems) also took place culminating in the launch of BBC2 on 20th April 1964.

Colour was added to BBC2 in 1967 (from 25kW transmitters now in use for BBC1 in Belfast) and eventually a full 625 line colour service commenced in November 1969 using the 40kW equipment seen today. The IBA 625 line service also started in November 1969 from an adjoining building and Channel 4 commenced in November 1982. The BBC 405 line service closed at the beginning of 1985.

Local Radio London VHF was transferred from Wrotham (Kent) in 1980 to provide better coverage in the London area with lower power.

A temporary Radio 1 VHF stereo service commenced October 1987 until the permanent service from Wrotham can start in 1989.

The MIC (Monitoring and Information Centre) was set up in 1983 to look after the south-east (and subsequently all UK) stations. It is co-sited with, but technically separate from, the transmitters.

The latest changes have been the new UHF drives, the start of an experimental digital stereo sound TV service, and the replacement of Radio London with Greater London Radio at increased power.

The Crystal Palace staff also look after a small number of relay stations in the south London area and there is a Test Room where a Central Maintenance Area has been set up to cater for the needs of the department nationwide.

Advantage of the good receiving site is taken by the BBC Outside Broadcast Dept who have a small link facility.

The station is staffed 24 hours all year round in order to provide coverage of all BBC radio and TV stations in the UK plus the HF stations in Hong Kong and the Seychelles.

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TECHNICAL

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BBC1	ch26(-)	Vis 511.25MHz	Snd 517.25MHz	850kW ERP Hor Pol
BBC2	ch33(0)	Vis 567.25MHz	Snd 573.25MHz	850kW ERP Hor Pol

Programme feeds (video with sound-in-syncs) arrive from TV Centre on BT cables with a 12GHz link as reserve (this also carries the stereo SiS).

The video is processed (pre-distorted) in solid-state drives before being passed to the UHF amplifiers.

Each service consists of a parallel pair of identical transmitters. Steam-cooled klystrons (with 23kV HT) amplify the vision and sound in each of the transmitters to 40kW (peak sync) and 4kW respectively. Special gridded klystrons are used for vision and in the 'pulsed' mode can operate with an efficiency of 65%.

After being combined in various combinations, the signals pass up the two main RF feeders to the split aerial system at the top of the 712 Ft tower from where they reach a population of 13 million people.

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Greater London Radio	94.9MHz	4kW ERP	Slant Pol.
Radio 1	104.8MHz	2kW ERP	Slant Pol.

Programmes arrive on stereo BT cables (with reserve UHF link for GLR) and are processed and amplified by totally solid-state equipment of BBC design before being radiated to about 8 million people from an aerial mounted at 500 Ft on the tower.

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The MIC receives information (both off-air and on BT circuits) from remote stations and processes the data automatically to provide the operator with a display of the status of the network. Action is taken as necessary to correct any problems and relevant parties informed.

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The station takes power at 11 kV from two different parts of the National Grid and this is transformed down to 415 volts 3 phase for use by the equipment. No reserve alternator is provided although a portable unit could power the OB equipment in an emergency.