

TV RECEPTION SURVEY REPORT

THIS POST CONSTRUCTION TV RECEPTION SURVEY WAS CONDUCTED OUT BY:

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Contents

SUMMARY	3
INTRODUCTION	4
SIGNAL BLOCKING	5
FIELD SURVEY METHOD	6
FIELD SURVEY EQUIPMENT	6
SERVICES LIKELY TO BE AFFECTED	7
TERRESTRIAL TELEVISION RECEPTION	7
SATELLITE TELEVISION RECEPTION	7
THE DEVELOPMENT:	8
OVERVIEW OF DEVELOPMENT	8
DETAILS OF DEVELOPMENT	8
COORDINATES	8
TECHNICAL BACKGROUND – WINTER HILL	9
PLAN A: LOCATION OF THE DEVELOPMENT	10
PHOTO A: THE NEW DEVELOPMENT	11
PHOTO B: THE NEW DEVELOPMENT	12
TERRESTRIAL TELEVISION SERVICES	13
SATELLITE TELEVISION SERVICES	13
FIELD SURVEY TEST RESULTS AND INFORMATION	14
MITIGATION	22
SATELLITE TELEVISION RECEPTION	22
POTENTIAL IMPACT ZONE – MAP 1	23
REFERENCE OF TERMS	24

SUMMARY

The new building on Rochdale Road is now complete. Subsequently this Post Construction TV Reception Survey has been conducted to ascertain whether the introduction of the development has caused an impact to existing viewers' television reception in the surrounding area.

Since the Pre-Construction TV Reception Survey, which was undertaken in July 2017, the Winter Hill television transmitter has undergone certain changes (please refer to the Transmitter Technical Background section of this report). Although these changes have taken place, we are still able to conduct the comparison of the Pre and Post Construction Survey results, as the Winter Hill broadcast transmit powers of the main channels have remained constant.

There has been as predicted on the preconstruction survey, a reduction in aerial signal strength to the southeast of the development, however this area has undergone lots of building development since 2017, (one such example is the Hampton Hotel adjacent to the northwest in the direction of the Winter Hill transmitter) there are also ongoing new builds of other multistorey properties in the immediate area and as such any reports of signal loss will most likely not be as a result of the just the introduction of this building but more of a cumulative effect of all of these in the locality.

A comparison of the pre and post construction test results shows that there has not been any major widescale impact to television reception caused by the new development and that the post signal levels although lower in signal strength to the pre-existing signal levels are still acceptable to receive reception at most test locations. As always, we recommend that funds are available to deal with the investigation of any reported interference and to enable subsequent mitigation requirements.

There were no satellite dishes highlighted on the Preconstruction survey that would be affected to the northeast of the development.

If there are any other buildings affected, it is likely this may would have already been highlighted and complaints received.

Please refer to the Mitigation section of this report for remedies to rectifying terrestrial television reception issues.

INTRODUCTION

Theory predicts, and practical evaluation has confirmed, that the introduction of new structures into an area can cause interference to television reception.

This Post-Construction TV Reception Survey has been undertaken to record the new television reception baseline conditions and assess if the introduction of the development has impacted upon existing viewers' television reception in the surrounding area.

To enable us to make an assessment, an initial desktop study is conducted, followed by a comprehensive field survey.

The desktop study is conducted using plans of the development for example the buildings' location and elevations, along with maps of the surrounding area and details of local television transmitter broadcast information.

The field survey is then conducted at several test point locations surrounding the development. Television signal test results and relevant information are recorded at each of the test point locations.

This report includes the information collated during the desk top study and field survey along with an assessment of where, or if, the introduction of the development has the caused interference to existing viewers' television reception and determine if mitigation is required.

SCOPE

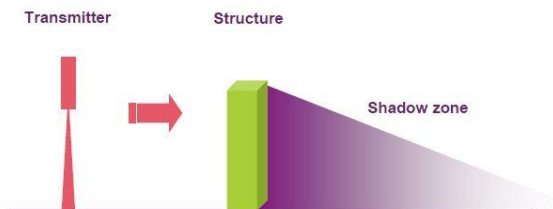
To conduct a desktop study and comprehensive field survey to record existing baseline television reception conditions in the surrounding area to the development. To provide details of any impact zone and methods of mitigation if required, to conform to Local Planning Authority requirements
The results and information recorded during this field survey assist in assessing if, or where, the introduction of the development has the potential to impact upon existing viewers' television reception.

DISCUSSIONS

The introduction of a new building or structure into an area has the potential to cause interference to existing viewers' television reception.

SIGNAL BLOCKING

Wireless signals, especially those using high frequencies such as television, behave much like light. Therefore, it is desirable to have a clear line of sight path between the transmitter and a receiving aerial to achieve the most reliable reception. The presence of a tall structure between the transmitter and receiver will cause a 'shadow' to be cast behind the structure on the side opposite the transmitter. This effect is like the way that an obstruction between a lamp and an observer's eye blocks out the light.

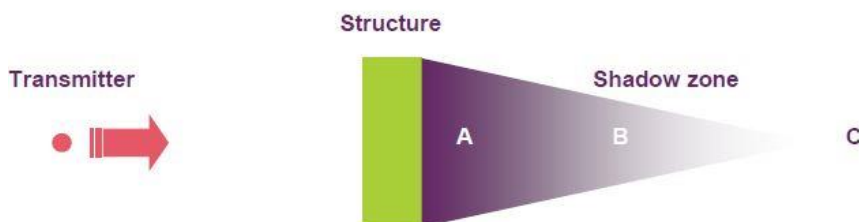


The shadow cast by a structure does not have hard edges though and does not usually extend indefinitely. While there would be a significant reduction in signal levels immediately behind the structure, the blocking effect of the structure diminishes with distance because of diffraction. Diffraction is a process where signals appear to bend behind the structure and partially fill in the shadow.

Zone A - close behind the structure (typically a few tens of metres) there may be a significant reduction in signal level with a possible complete loss of reception.

Zone B - further away (typically a few hundred metres) the signal reduction is less severe, and the shadow will be smaller as diffraction effects partially fill in the shadow. Depending on the size of the structure, some locations could still lose reception completely.

Zone C - some distance away (1-5km) the shadow will effectively have disappeared. The resulting shadow is therefore a triangular shape as shown in Figure 2.



It should be noted that the severity of the reduction and the actual size of the shadow will depend upon many factors including the construction of the structure and its height – the distances given above are for guidance only.

FIELD SURVEY METHOD

Tests are conducted at a selection of locations in the area surrounding the development.

Test results are recorded regarding television signal strength and quality: -

Strength is recorded in: dBμv

Quality is recorded in: VBER (Standard definition SD)
LBER (High-definition HD)

Due to the rollout of the 4G Networks all results are recorded with a CAI approved benchmarked aerial with a balun and LTE filter

An alternative transmitter is assessed for and where receivable, results are recorded.

All tests are conducted at a 10m height above ground level.

The direction and type of existing viewers' television aerials is noted.

A bearing and distance to the development is recorded at each test point location, for comparison with the bearing and distance to the television transmitter serving the area.

Existing obstructions to television reception are noted.

FIELD SURVEY EQUIPMENT

The field survey is conducted using the following equipment.

Specialist vehicle complete with telescopic mast.

360° Antenna rotator

14 Element CAI approved wideband UHF antenna with balun and LTE filter, one vertical and one horizontal polarisation.

20m x WF100 twin screened CAI approved coaxial cable.

Televes spectrum analyser/field strength meter

Ordnance survey maps

Garmin GPS receiver

Compass

Digital camera

Digital terrestrial television decode.

SERVICES LIKELY TO BE AFFECTED

TERRESTRIAL TELEVISION RECEPTION

There are two potential ways that the introduction of a new building can cause interference to terrestrial television reception; these are obstruction and reflection.

Obstruction occurs when existing viewers are in an area where their television aerial beam path (direction) to the television transmitter is either through, or within proximity to, the new building or structure. This can result in a reduction of television signal strength and quality and in some cases (if existing viewers are located within the proximity to the new building or structure); receiving terrestrial television signals can become problematic and may not be achievable.

Reflection occurs when the new building reflects terrestrial television signals. These unwanted reflected signals are received on the existing viewer's television aerial along with the direct signals from the television transmitter, resulting in irregularities of television signal strength and quality. However, digital terrestrial television broadcasts are less prone to reflections than the previous analogue television broadcasts, but this must still be considered when assessing any potential impact.

SATELLITE TELEVISION RECEPTION

Satellite television reception requires a clear line of sight between the satellite antenna and the satellite it is aligned to. In most cases the angle of the satellite antenna to the satellite orbiting the earth is between 20- and 30-degrees elevation.

This elevation must be considered when assessing if the introduction of the new building or structure has the potential to obstruct existing viewers' satellite antenna beam path to the satellite.

Satellite reception is very rarely affected on a large scale and is mostly only relevant to existing viewers within the proximity to the new building or structure.

THE DEVELOPMENT:

103 Rochdale Road
Manchester

CONDUCTED ON BEHALF OF:

Beech Construction
60 Oxford Street
Manchester
M1 5EE

OVERVIEW OF DEVELOPMENT

The development is a new build, of 15 storeys at the location of 103 Rochdale Rd

DETAILS OF DEVELOPMENT

Development Type: New Build

Building Height: The development is to have varying heights but with a maximum elevation of 15 storeys, including ground floor, (maximum height 49.8m).

COORDINATES

Prior to the commencement of the survey, coordinates for the development are entered into a GPS receiver along with the coordinates for the television transmitter serving the area. This enables us to record a bearing and distance from each test point location to the development, for comparison with the bearing and distance to the television transmitter. The coordinates used throughout the survey are listed below and shown on Plan A.

LOCATION**NGR**

Development Position	SJ 84660 99003
Winter Hill Transmitter	SD 66000 14400

TECHNICAL BACKGROUND – WINTER HILL

Transmitter No: 103.00
 NGR: SD 660144
 Approximate bearing from the development: 313°
 Approximate distance from the development: 25.51 km

Television Broadcasts from the Winter Hill Transmitter at the time of the Pre-Construction Television Reception Survey (July 2017):

UHF Channel	Frequency	Multiplexer	Format	Broadcast Power
31	554.0	COM7	HD	25,700W
37	602.0	COM8	HD	14,000W
49	698.0	ARQA	SD	100,000W
50	706.0	BBCA	SD	100,000W
54	737.8	BBCB	HD	100,000W
55	746.0	ARQB	SD	100,000W
56	754.0	LM	SD	1,000W
58	770.0	SDN	SD	100,000W
59	778.0	D3+4	SD	100,000W

Television Broadcasts from the Winter Hill Transmitter at the present time (November 2022):

UHF Channel	Frequency	Multiplexer	Format	Broadcast Power
37	602.0	COM6	SD	14,000W
31	554.0	ARQA	SD	100,000W
32	562.0	BBCA	SD	100,000W
35	585.8	BBCB	HD	100,000W
29	538.0	SDN	SD	100,000W
34	578.0	D3+4	SD	100,000W

PLAN A: Location of the Development

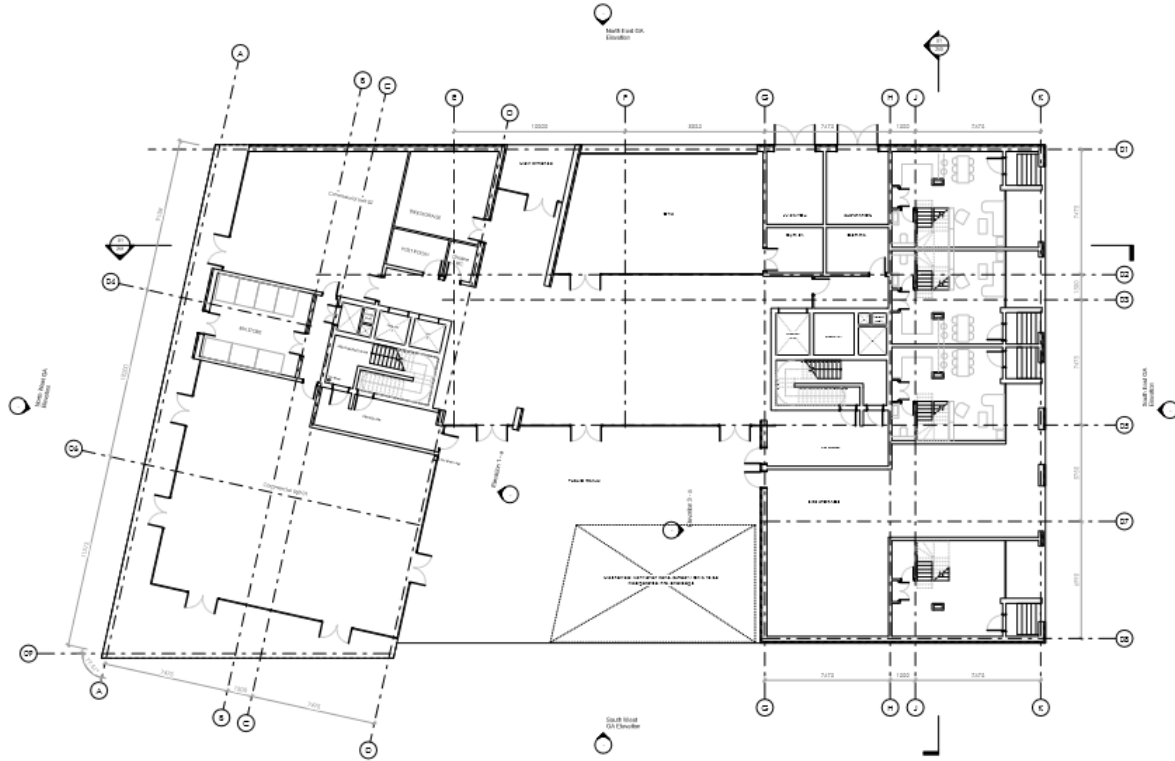


PHOTO A: The new development



PHOTO B: The new development



TERRESTRIAL TELEVISION SERVICES

Viewers in the surrounding area to the proposed development are receiving their terrestrial television services from the Winter Hill transmitter, located to the northwest of the site, approx. 24.2 km away

The Winter Hill transmitter broadcasts 6 full digital multiplexers providing the full range of standard definition and high-definition digital terrestrial television services available on Freeview, with regional programming. Please refer to the transmitter details for further information

The test results recorded during the survey show that terrestrial television reception from the Winter Hill transmitter has good signal strengths, and at most test points the quality is acceptable. Please note that the results are recorded at a 10m aerial height, in accordance with TV reception survey specifications and that for existing television aerials sited at multi-storey height reception could be much improved.

During the survey, tests were conducted to receive an alternative transmitter to the Winter Hill transmitter. The result of these tests was that no alternative transmitter could be received at an acceptable quality or strength.

SATELLITE TELEVISION SERVICES

Both Sky TV and Freesat are broadcast from the same fleet of satellites located at an orbital position of 28.2° east of south, with a required satellite dish elevation of approximately 23°.

Sky TV is primarily a subscription-based service offering several packages of various television services at monthly subscription costs.

Freesat is a non-subscription-based service and offers a similar television service line up to Freeview and selectable regional programming.

FIELD SURVEY TEST RESULTS AND INFORMATION

TEST POINT 1

Location Thompson Street
NGR: SJ 84722 98958
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	309°	24.2 km
Proposed Development	340°	0.09 km

Visible Existing Aerial Arrays: 10 element and high gain aerials on 2m and 3m masts, mounted at rooftop height on 2 and 3 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings in the general direction of the Winter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	68	37	32		-6	Pass
37	602.0	COM8	HD	67	39	32		-6	Pass
49	698.0	ARQA	SD	70	29	31	-8		Pass
50	706.0	BBCA	SD	72	38	28	-8		Pass
54	737.8	BBCB	HD	73	33	28		-6	Pass
55	746.0	ARQB	SD	73	31	31	-8		Pass
56	754.0	LM	SD	57	17	22	-7		Pass
58	770.0	SDN	SD	70	33	25	-8		Pass
59	778.0	D3+4	SD	68	18	22	-8		Pass

WINTER HILL TRANSMITTER - REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	52	25	24	-8		Pass
31	554.0	ARQA	SD	56	22	22	-7		Marginal
32	562.0	BBCA	SD	53	26	25	-8		Pass
35	585.8	BBCB	HD	52	23	20		-3	Marginal
29	538.0	SDN	SD	53	22	20	-7		Pass
34	578.0	D3+4	SD	60	26	26	-8		Pass

Television reception is of an acceptable quality and strength

TEST POINT 2

Location Cassidy Close
NGR: SJ 84835 98915
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	24.3 km
Proposed Development	307°	0.15 km

Visible Existing Aerial Arrays: high gain aerial on fire station building on 3m mast, mounted at rooftop height on 2 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	69	37	31		-6	Pass
37	602.0	COM8	HD	67	39	29		-4	Pass
49	698.0	ARQA	SD	76	34	30	-8		Pass
50	706.0	BBCA	SD	78	40	33	-8		Pass
54	737.8	BBCB	HD	79	34	30		-6	Pass
55	746.0	ARQB	SD	78	33	32	-8		Pass
56	754.0	LM	SD	61	17	22	-7		Pass
58	770.0	SDN	SD	76	34	33	-8		Pass
59	778.0	D3+4	SD	75	34	33	-8		Pass

WINTER HILL UHF TRANSMITTER - REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	58	30	28	-8		Pass
31	554.0	ARQA	SD	56	35	25	-8		Pass
32	562.0	BBCA	SD	56	37	36	-8		Pass
35	585.8	BBCB	HD	60	34	30		-6	Pass
29	538.0	SDN	SD	62	24	23	-8		Pass
34	578.0	D3+4	SD	62	30	28	-8		Pass

Television reception is of a good quality and strength

TEST POINT 3

Location Poland Street
NGR: SJ 85099 98942
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.3 km
Proposed Development	283°	0.4 km

Visible Existing Aerial Arrays: 10 element and high gain aerials on 2m and 3m masts, mounted at rooftop height on 2 and 3 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings/Trees in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	70	38	33		-6	Pass
37	602.0	COM8	HD	69	39	30		-6	Pass
49	698.0	ARQA	SD	70	29	31	-8		Pass
50	706.0	BBCA	SD	71	38	28	-8		Pass
54	737.8	BBCB	HD	75	35	26		-6	Pass
55	746.0	ARQB	SD	73	31	31	-8		Pass
56	754.0	LM	SD	55	17	22	-7		Pass
58	770.0	SDN	SD	72	33	25	-8		Pass
59	778.0	D3+4	SD	69	22	22	-8		Pass

WINTER HILL UHF TRANSMITTER – REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	75	39	33	-8		Pass
31	554.0	ARQA	SD	75	39	33	-8		Pass
32	562.0	BBCA	SD	75	42	33	-8		Pass
35	585.8	BBCB	HD	76	32	33		-6	Pass
29	538.0	SDN	SD	75	42	34	-8		Pass
34	578.0	D3+4	SD	75	38	33	-8		Pass

Television reception is of a good quality and strength

TEST POINT 4

Location Bengal Street
NGR: SJ 85001 98773
Alt: 54 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	24.5 km
Proposed Development	310°	0.4 km

Visible Existing Aerial Arrays: 10 element aerials on 1m and 2m masts, mounted at rooftop height on 2 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	57	37	32		-4	Pass
37	602.0	COM8	HD	59	34	32		-6	Pass
49	698.0	ARQA	SD	65	32	31	-8		Pass
50	706.0	BBCA	SD	65	36	32	-8		Pass
54	737.8	BBCB	HD	66	31	28		-5	Pass
55	746.0	ARQB	SD	66	31	32	-7		Pass
56	754.0	LM	SD	51	17	22	-7		Pass
58	770.0	SDN	SD	64	33	32	-7		Pass
59	778.0	D3+4	SD	62	32	31	-8		Pass

WINTER HILL UHF TRANSMITTER - REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	58	31	27	-8		Pass
31	554.0	ARQA	SD	63	37	32	-8		Pass
32	562.0	BBCA	SD	64	42	32	-8		Pass
35	585.8	BBCB	HD	61	31	28		-6	Pass
29	538.0	SDN	SD	65	42	32	-8		Pass
34	578.0	D3+4	SD	63	30	30	-8		Pass

Television reception is of a good quality and strength

TEST POINT 5

Location Sherratt Street
NGR: SJ 84875 98791
Alt: 55 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.45km
Proposed Development	323°	0.3 km

Visible Existing Aerial Arrays: 10 element aerials on 2m and 3m masts, mounted at rooftop height on 2 and 3 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings/Land in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	70	36	30		-6	Pass
37	602.0	COM8	HD	69	39	29		-4	Pass
49	698.0	ARQA	SD	76	34	30	-8		Pass
50	706.0	BBCA	SD	78	40	33	-8		Pass
54	737.8	BBCB	HD	79	34	30		-6	Pass
55	746.0	ARQB	SD	78	33	32	-8		Pass
56	754.0	LM	SD	62	18	22	-7		Pass
58	770.0	SDN	SD	72	34	33	-8		Pass
59	778.0	D3+4	SD	71	34	303	-8		Pass

WINTER HILL UHF TRANSMITTER - REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	52	23	22	-8		Pass
31	554.0	ARQA	SD	58	24	24	-8		Pass
32	562.0	BBCA	SD	50	30	28	-8		Pass
35	585.8	BBCB	HD	55	20	12		-3	Marginal
29	538.0	SDN	SD	55	22	22	-7		Pass
34	578.0	D3+4	SD	48	22	20	-7		Pass

Television reception is of an acceptable quality and strength

TEST POINT 6

Location Bendix Street
NGR: SJ 84769 98875
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	309°	24.3 km
Proposed Development	333°	0.17 km

Visible Existing Aerial Arrays: high gain aerials on 3m masts, mounted at rooftop height on 3 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	62	36	30		-6	Pass
37	602.0	COM8	HD	59	38	29		-4	Pass
49	698.0	ARQA	SD	61	29	29	-8		Pass
50	706.0	BBCA	SD	57	31	28	-8		Pass
54	737.8	BBCB	HD	56	31	22		-2	Pass
55	746.0	ARQB	SD	56	25	20	-8		Pass
56	754.0	LM	SD	38	13	19	-5		Marginal
58	770.0	SDN	SD	55	33	22	-8		Pass
59	778.0	D3+4	SD	55	29	28	-8		Pass

WINTER HILL TRANSMITTER - REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	48	20	18	-6		Marginal
31	554.0	ARQA	SD	50	22	22	-7		Marginal
32	562.0	BBCA	SD	47	25	22	-7		Marginal
35	585.8	BBCB	HD	50	23	20		-3	Marginal
29	538.0	SDN	SD	49	20	20	-7		Marginal
34	578.0	D3+4	SD	55	25	24	-7		Pass

Television reception is of an acceptable quality and strength

TEST POINT 7

Location Marshall Street
NGR: SJ 84686 98830
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	305°	24.3km
Proposed Development	030°	0.2 km

Visible Existing Aerial Arrays: 10 element aerials on 2m and 3m masts, mounted at rooftop height on 2 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	66	36	34		-6	Pass
37	602.0	COM8	HD	65	39	30		-3	Pass
49	698.0	ARQA	SD	72	32	32	-8		Pass
50	706.0	BBCA	SD	71	38	33	-8		Pass
54	737.8	BBCB	HD	72	32	30		-6	Pass
55	746.0	ARQB	SD	72	31	32	-8		Pass
56	754.0	LM	SD	51	12	20	-7		Pass
58	770.0	SDN	SD	71	32	32	-8		Pass
59	778.0	D3+4	SD	70	33	33			Pass

WINTER HILL TRANSMITTER - REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	58	28	25	-8		Pass
31	554.0	ARQA	SD	59	30	26	-7		Pass
32	562.0	BBCA	SD	65	30	28	-8		Pass
35	585.8	BBCB	HD	56	30	28		-6	Pass
29	538.0	SDN	SD	65	30	28	-8		Pass
34	578.0	D3+4	SD	60	26	26	-8		Pass

Television reception is of a good quality and strength

TEST POINT 8

Location Cable Street
NGR: SJ 84550 98847
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.1 km
Proposed Development	050°	0.2 km

Visible Existing Aerial Arrays: 10 element aerials on 2m masts, mounted at rooftop height on 3 storey properties, directed towards the Winter Hill Transmitter

Visible Existing Obstructions: Various multi-storey buildings in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report July 2017

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	69	36	33		-6	Pass
37	602.0	COM8	HD	69	38	31		-6	Pass
49	698.0	ARQA	SD	78	34	33	-8		Pass
50	706.0	BBCA	SD	78	40	33	-8		Pass
54	737.8	BBCB	HD	77	35	29		-6	Pass
55	746.0	ARQB	SD	77	34	32	-8		Pass
56	754.0	LM	SD	57	13	21	-7		Pass
58	770.0	SDN	SD	75	35	33	-8		Pass
59	778.0	D3+4	SD	74	34	33	-8		Pass

WINTER HILL UHF TRANSMITTER - REPORT

Post Construction signal levels November 2022

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
37	602.0	ARQB	SD	63	27	26	-8		Pass
31	554.0	ARQA	SD	45	23	22	-6		Marginal
32	562.0	BBCA	SD	60	30	27	-8		Pass
35	585.8	BBCB	HD	57	28	25		-6	Pass
29	538.0	SDN	SD	59	26	25	-6		Marginal
34	578.0	D3+4	SD	56	30	28	-8		Pass

Television reception is of an acceptable quality and strength

MITIGATION

Terrestrial Television Reception

Remedial Aerial Work

One or all the following may assist in rectifying interference being received to terrestrial television reception

Change of aerial type to one most suited to the type of interference being received.

Redirecting existing television aerial to an alternative transmitter that is not affected, in some cases the existing television aerial may not be suitable for redirecting and the installation of a suitable television aerial may be required

Re-siting of the television aerial to a position on the property where interference is reduced or not present.

Increase or decrease of aerial height

Installation of masthead amplification to improve television signal strengths being received

Remote Television Aerial

When a remote television aerial is positioned at a location with excellent quality television reception, (which can be a considerable distance from the affected area), and the signals are brought back via a cable network to the affected properties.

Utilising Satellite Reception

Should rectifying terrestrial television reception prove problematic, the installation of satellite systems using the Freesat platform can assist in rectifying reception issues.

To provide satellite television reception for individual affected dwellings or commercial units requires the installation of a satellite dish and set top box.

Satellite Television Reception

Remedial Satellite Work

One or all the following may assist in rectifying satellite television reception issues.

Re-siting of the satellite antenna to a position on the property where a clear line of sight can be achieved.

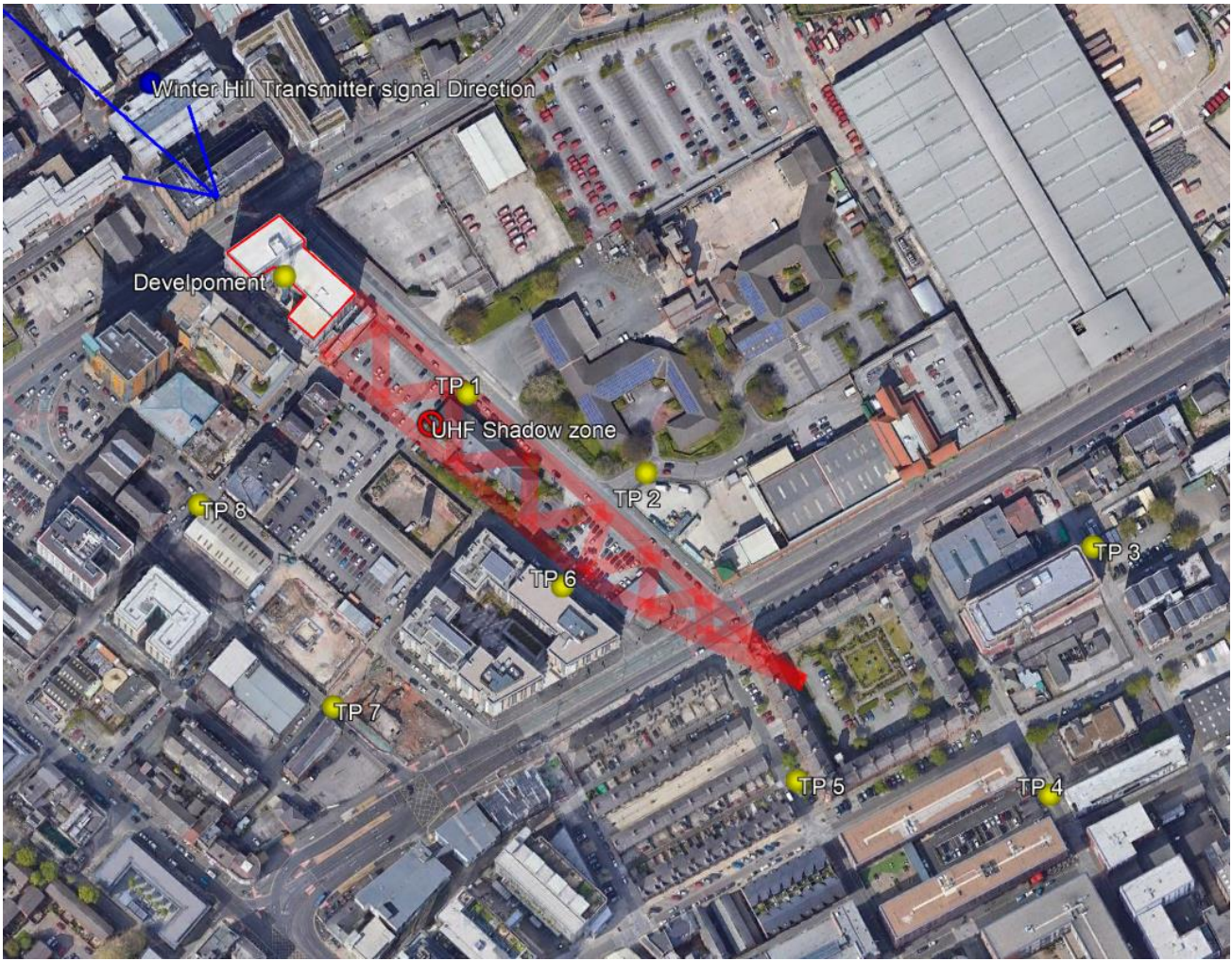
Increase in height of the satellite antenna to achieve a clear line of sight to the satellite.

Remote Satellite Dish

When the receiving satellite dish is sited in a position where a clear line of sight can be achieved; this can sometimes be a considerable distance from the affected property. In some instances, the satellite dish may require siting on the offending property to achieve a clear line of sight, or on an adjoining property where permission will have to be sought. The signals are brought back to the affected property via a cable and amplifier network.

The need for such mitigation would need to be determined on a case-by-case basis.

POTENTIAL IMPACT ZONE – MAP 1



REFERENCE OF TERMS

c.	Circa
CH	The UHF Channel allocation from the transmitter.
MUX	The digital multiplexer allocation/operator.
Tx	Transmitter.
dB μ v	Carrier strength reading (decibel microvolt).
C/N	Carrier /Noise Ratio
VBER	Measurement for digital signal after error correction (BER after VITERBi)
LBER	BER after been applied the LDPC (low density parity check) error correction.
SD	SD Standard Definition
HD	HD High Definition
NGR	National Grid Reference
ALT	Altitude above sea level at the location.
BRG	Bearing from North.
GPS	Global Positioning System.