

TV RECEPTION SURVEY REPORT

THIS POST CONSTRUCTION TV RECEPTION SURVEY WAS CARRIED OUT BY:

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EXECUTIVE SUMMARY

The new building at on Mason street is now almost complete. Subsequently this Post Construction TV Reception Survey has been conducted in order 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 September 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 carry out the comparison of the Pre-Construction and Post Construction Survey results, as the Winter Hill broadcast powers have remained constant.

A comparison of the Pre and Post construction test results shows that there has been no wide scale impact to television reception caused by the new development and that the pre-existing signal levels have been generally maintained.

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 existing television reception baseline conditions and assess if the introduction of the new development has the potential to impact 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.

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 potential to cause interference to existing viewers' television reception, and mitigation if required.

SCOPE

To carry out 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 potential impact zone and methods of mitigation if required, to conform to Local Planning Authority requirements

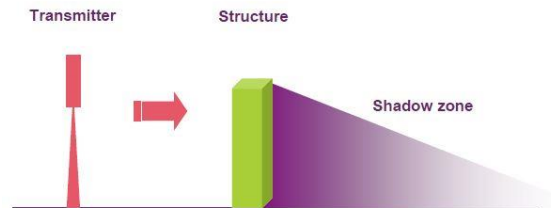
The results and information recorded during this field survey assist in assessing if, or where, the introduction of the development has the potential to impact upon existing viewers' television reception.

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 relatively 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 in order 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 similar to the way that an obstruction between a lamp and an observer's eye blocks out the light.

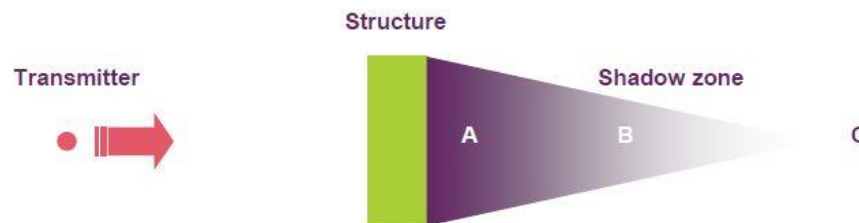


The shadow cast by a structure does not have hard edges though and does not usually extend indefinitely. While there would be a large reduction in signal levels immediately behind the structure, the blocking effect of the structure diminishes with distance because of diffraction. Diffraction is a process 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 large 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 carried out 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 tested for and where receivable, results are recorded.

All tests are carried out 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 carried out 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 decoder

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 located in an area where their television aerial beam path (direction) to the television transmitter is either through, or within very close 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 close 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 taken into account 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 taken into account 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 close proximity to the new building or structure.

THE DEVELOPMENT:

Mason Street,
Manchester

CARRIED OUT ON BEHALF OF:

CEPF II Mason Street Developments Ltd
33 Cavendish Square London

OVERVIEW OF DEVELOPMENT

The development is a new build, of 9 storeys at the location Mason Street, Manchester

DETAILS OF DEVELOPMENT

Development Type:

New Build

Building Height:

The development has varying heights but with a maximum elevation of 9 storeys, including ground floor, (maximum height 28.4m).

Please refer to;

Plan A which highlights the development's location

Plan B the site elevation

EXISTING BUILDINGS

A series of photographs has been taken to highlight the existing area at the development's location, and any existing buildings in the surrounding area.

Photograph A: - The development's location
Photograph B: - View directly to the north of the development.
Photograph C: - View directly to the east of the development.
Photograph D: - View directly to the south of the development.
Photograph E: - View directly to the west of the development.

COORDINATES

Prior to commencement of the survey, coordinates at the development's location 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

NATIONAL GRID REFERENCE

Development Position	SJ 84583 98842
Winter Hill Transmitter	SD 66000 14400

TECHNICAL BACKGROUND – WINTER HILL

TRANSMITTER No: 103.00

NGR: SD 6600 14400

APPROXIMATE BEARING FROM THE DEVELOPMENT: 314°

APPROXIMATE DISTANCE FROM THE DEVELOPMENT: 26.22 km

Television Broadcasts from the Winter Hill Transmitter at the time of the Pre-Construction Television Reception Survey (September 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 (December 2019):

UHF Channel	Frequency	Multiplexer	Format	Broadcast Power
31	554.0	COM7	HD	25,700W
37	602.0	COM6	SD	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	HD	100,000W
56	754.0	LM	SD	1,000W
58	770.0	SDN	SD	100,000W
59	778.0	D3+4	SD	100,000W

PHOTO A: THE DEVELOPMENT LOCATION



PHOTO B: View directly to the north of the development



PHOTO C: View directly to the east of the development



PHOTO D: View directly to the south of the development



PHOTO E: View directly to the west of the development



TERRESTRIAL TELEVISION SERVICES

Viewers in the surrounding area to the 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 9 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 the majority of 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 carried out 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 a number of 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 Chadderton Street
NGR: SJ 84672 98817
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	309°	24.2 km
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 Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Pre-Construction signals as per report on the 22nd September 2017

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	48	26	20		-2	Pass
37	602.0	COM8	HD	44	24	17		-2	Pass
49	698.0	ARQA	SD	56	23	22	-5		Pass
50	706.0	BBCA	SD	56	22	18	-4		Pass
54	737.8	BBCB	HD	51	21	22		-2	Pass
55	746.0	ARQB	SD	52	23	22	-6		Pass
56	754.0	LM	SD	40	14	14	-4		Marginal
58	770.0	SDN	SD	51	24	22	-6		Pass
59	778.0	D3+4	SD	46	16	18			Pass

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	49	32	23		-2	Pass
37	602.0	COM8	SD	57	36	25	-7		Pass
49	698.0	ARQA	SD	53	36	21	-7		Pass
50	706.0	BBCA	SD	52	20	18	-5		Pass
54	737.8	BBCB	HD	51	31	19		-2	Pass
55	746.0	ARQB	HD	48	30	21		-2	Pass
56	754.0	LM	SD	18	-	-	-	-	Fail
58	770.0	SDN	SD	47	31	18	-4		Pass
59	778.0	D3+4	SD	50	22	18	-5		Pass

Television reception is of a good quality and strength

TEST POINT 2

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

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.1 km
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 on the 22nd September 2017

Channel	Frequency	MUX	Format	Level (dB μ V)	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

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	46	30	22		-2	Pass
37	602.0	COM8	SD	58	37	32	-8		Pass
49	698.0	ARQA	SD	55	34	32	-8		Pass
50	706.0	BBCA	SD	50	28	23	-6		Pass
54	737.8	BBCB	HD	57	37	26		-4	Pass
55	746.0	ARQB	HD	49	28	26		-6	Pass
56	754.0	LM	SD	15	-	-	-		Fail
58	770.0	SDN	SD	50	31	28	-7		Pass
59	778.0	D3+4	SD	48	32	24	-8		Pass

Television reception is of a good quality and strength

TEST POINT 3

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

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	305°	24.3km
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 on the 22nd September 2017

Channel	Frequency	MUX	Format	Level (dB μ V)	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

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	63	28	30		-5	Pass
37	602.0	COM8	SD	60	32	28	-8		Pass
49	698.0	ARQA	SD	70	34	34	-8		Pass
50	706.0	BBCA	SD	69	32	32	-8		Pass
54	737.8	BBCB	HD	68	28	28		-6	Pass
55	746.0	ARQB	HD	65	30	28		-6	Pass
56	754.0	LM	SD	28	-	-	-		Fail
58	770.0	SDN	SD	71	30	32	-8		Pass
59	778.0	D3+4	SD	70	34	33	-8		Pass

Television reception is of a good quality and strength

TEST POINT 4

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

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	309°	24.3 km
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 on the 22nd September 2017

Channel	Frequency	MUX	Format	Level (dB μ V)	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

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	48	25	22		-2	Pass
37	602.0	COM8	SD	53	32	28	-8		Pass
49	698.0	ARQA	SD	48	29	22	-8		Pass
50	706.0	BBCA	SD	47	19	20	-7		Pass
54	737.8	BBCB	HD	46	28	22		-3	Pass
55	746.0	ARQB	HD	44	25	22		-3	Pass
56	754.0	LM	SD	17	-	-	-		Fail
58	770.0	SDN	SD	48	28	22	-7		Pass
59	778.0	D3+4	SD	49	32	26	-7		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
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 on the 22nd September 2017

channel	Frequency	MUX	Format	Level (dB μ V)	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

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	68	30	28		-6	Pass
37	602.0	COM8	SD	65	35	30	-8		Pass
49	698.0	ARQA	SD	70	32	28	-8		Pass
50	706.0	BBCA	SD	70	32	30	-8		Pass
54	737.8	BBCB	HD	65	32	28		-6	Pass
55	746.0	ARQB	HD	68	25	28		-6	Pass
56	754.0	LM	SD	45	18	18	-6		Marginal
58	770.0	SDN	SD	68	32	30	-8		Pass
59	778.0	D3+4	SD	70	28	26	-8		Pass

Television reception is of a good quality and strength

TEST POINT 6

Location: Mason street
NGR: SJ 84549 98836
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.1 km
Development	090°	0.05 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 on the 22nd September 2017

Channel	Frequency	MUX	Format	Level (dB μ V)	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

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	52	30	20		-2	Pass
37	602.0	COM8	SD	58	34	26	-8		Pass
49	698.0	ARQA	SD	59	38	26	-8		Pass
50	706.0	BBCA	SD	60	35	30	-8		Pass
54	737.8	BBCB	HD	55	36	24		-3	Pass
55	746.0	ARQB	HD	47	30	21		-4	Pass
56	754.0	LM	SD	16	-	-	-		Fail
58	770.0	SDN	SD	50	32	26	-8		Pass
59	778.0	D3+4	SD	52	35	30	-8		Pass

Television reception is of a good quality and strength

TEST POINT 7

Location Cable Street
NGR: SJ 84643 98763
Alt: 53 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.4km
Development	325°	0.1 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 on the 22nd September 2017

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	56	31	30		-6	Pass
37	602.0	COM8	HD	54	30	30		-3	Pass
49	698.0	ARQA	SD	65	32	32	-8		Pass
50	706.0	BBCA	SD	62	31	30	-8		Pass
54	737.8	BBCB	HD	61	32	30		-6	Pass
55	746.0	ARQB	SD	60	31	32	-8		Pass
56	754.0	LM	SD	44	12	18	-7		Marginal
58	770.0	SDN	SD	67	32	28	-8		Pass
59	778.0	D3+4	SD	59	33	30			Pass

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	47	28	20		-2	Pass
37	602.0	COM8	SD	54	32	22	-8		Pass
49	698.0	ARQA	SD	59	39	25	-6		Pass
50	706.0	BBCA	SD	54	26	19	-5		Pass
54	737.8	BBCB	HD	55	32	18		-2	Pass
55	746.0	ARQB	HD	50	32	24		-3	Pass
56	754.0	LM	SD	18	-	-	-		Fail
58	770.0	SDN	SD	51	33	21	-5		Pass
59	778.0	D3+4	SD	51	31	21	-7		Pass

Television reception is of a good quality and strength

TEST POINT 8

Location Anita street
NGR: SJ 84784 98750
Alt: 55 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.45km
Development	289°	0.2 km

Visible Existing Aerial Arrays: 10 element aerals 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 on the 22nd September 2017

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	60	31	30		-6	Pass
37	602.0	COM8	HD	59	32	29		-4	Pass
49	698.0	ARQA	SD	66	31	30	-8		Pass
50	706.0	BBCA	SD	68	30	33	-8		Pass
54	737.8	BBCB	HD	69	31	29		-6	Pass
55	746.0	ARQB	SD	68	30	28	-8		Pass
56	754.0	LM	SD	52	18	22	-7		Pass
58	770.0	SDN	SD	62	29	30	-8		Pass
59	778.0	D3+4	SD	61	28	31	-8		Pass

Post Construction signal levels

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
31	554.0	COM7	HD	56	39	27		-3	Pass
37	602.0	COM8	SD	63	45	34	-8		Pass
49	698.0	ARQA	SD	61	39	34	-8		Pass
50	706.0	BBCA	SD	60	39	30	-8		Pass
54	737.8	BBCB	HD	60	43	32		-4	Pass
55	746.0	ARQB	HD	57	36	32		-6	Pass
56	754.0	LM	SD	20	-	-	-		Fail
58	770.0	SDN	SD	58	36	33	-8		Pass
59	778.0	D3+4	SD	58	40	34	-8		Pass

Television reception is of a good quality and strength

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CONCLUSIONS

The new building at on Mason street is now almost complete. Subsequently this Post Construction TV Reception Survey has been conducted in order 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 September 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 carry out the comparison of the Pre-Construction and Post Construction Survey results, as the Winter Hill broadcast powers have remained constant.

A comparison of the pre and post construction test results shows that there has been no wide scale impact to television reception caused by the new development and that the pre-existing signal levels have been generally maintained.

There has been noted a slight reduction in aerial signal to the southeast of the development covering test points 1, 3, and 7. This area has predominantly commercial properties. If there is a particular building affected it is likely this may have already been highlighted and complaints received.

However, since the initial Survey in 2017 several other properties have been constructed and if signals have deteriorated it is most likely this building would not be the sole or primary cause.

Map 1 shows each of the test point positions and the television reception impact zone due to the introduction of the new building.

MITIGATION

None currently required- if any issues highlighted, they may require investigation on a case by case basis.

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

MITIGATION

Terrestrial Television Reception

Remedial Aerial Work

One or all of 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 good 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 utilising 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 of 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.

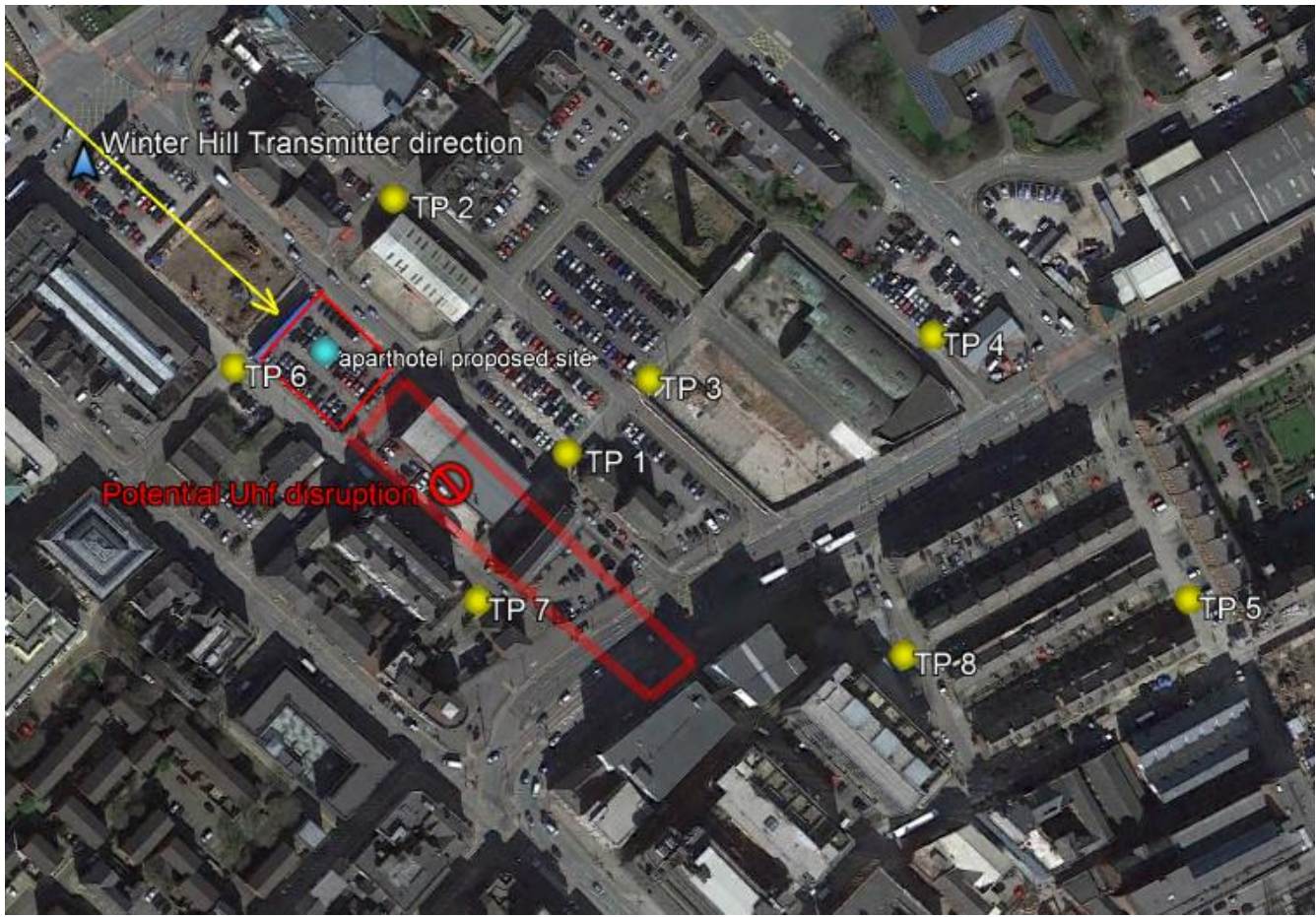
Increase in height of the satellite antenna to achieve a clear line of sight to the satellite.

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 in order 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.
dBµv	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.