

TV/FM & DAB RECEPTION SURVEY REPORT

THIS PRE-CONSTRUCTION TV/FM & DAB RECEPTION SURVEY WAS CONDUCTED BY:

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EXECUTIVE SUMMARY

This study was undertaken in May 2022, to investigate whether the proposed development could cause interference to television and radio broadcast service reception. The report also details the baseline reception conditions for future reference.

A survey has been undertaken to determine the potential effects of the introduction of the proposed development on Land to the west of Rodney Street, Manchester. Impacts to the reception of digital terrestrial television (Freeview) FM, DAB, and digital satellite television services (SKY and Freesat) have all been assessed.

The potential impact zone for terrestrial television reception covers an area to the southeast of the proposed development. Most of the potential impact zone covers the neighbouring properties directly to the Southeast, with the main affected location covering an area including parts of Jersey street (east), Mozart close, and Rodney street (south), and for these properties affected, mitigation may be required, Although we expect the overall impact to be a smaller impact than usual, as the new development is already in a 'shadow' of the 14 storey building at the top of Rodney street (Tribe building, Ancoats) and this building is already blocking the signal to a degree in this south-easterly direction.

FM and DAB reception signals being a lower frequency and as such more 'robust' are rarely affected and any deviation in signal levels would be only noticeable in proximity to the development.

Satellite reception should not be impacted by the development and is a viable option for Mitigation. We advise that the situation regarding television and satellite reception is monitored closely during the construction and any reports of interference are investigated promptly.

The use of cranes during the construction phase can also cause temporary interference. This should be monitored throughout construction, with mitigation used where necessary.

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

INTRODUCTION

This Pre-Construction TV/FM/DAB Reception Survey has been undertaken to record the existing baseline conditions and assess if the introduction of the proposed 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.

The desktop study is conducted using plans of the proposed development for example the proposed building's 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 proposed 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 proposed development has the potential to cause interference to existing viewers' television reception, and mitigation if required.

SCOPE

To conduct a desktop study and comprehensive field survey to record existing baseline television reception conditions in the surrounding area to the proposed development. To provide details of any potential impact zone and methods of mitigation if required, to conform to Local Planning Authority requirements

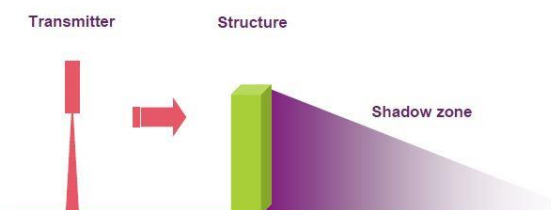
The results and information recorded during this field survey assist in assessing if, or where, the introduction of the proposed development has the potential to impact upon existing viewers' television reception.

DISCUSSIONS

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

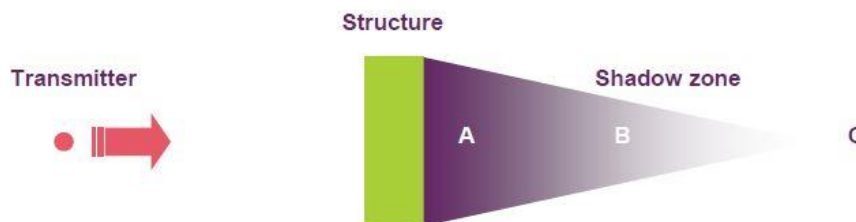


The shadow cast by a structure does not have hard edges though and does not usually extend indefinitely. While there would be a large reduction in signal levels immediately behind the structure, the blocking effect of the structure diminishes with distance because of diffraction. Diffraction is a process 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 conducted at a selection of locations in the area surrounding the proposed 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 evaluated 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 proposed 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
- FM Omni aerial
- DAB Omni aerial
- 20m x WF100 twin screened CAI approved coaxial cable
- Televes spectrum analyser/field strength meter
- Ordnance survey maps
- Garmin GPS receiver
- Compass
- Digital camera

SERVICES LIKELY TO BE AFFECTED

TERRESTRIAL TELEVISION RECEPTION

There are two potential ways that the introduction of a new building or extension 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 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 or extension 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 proximity to the new building or structure.

FM & DAB RECEPTION

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

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

Reflection occurs when the new building or extension reflects radio signals

FM & DAB reception is very rarely affected on a large scale and is mostly only relevant to existing listeners within proximity to the new building or structure

THE PROPOSED DEVELOPMENT:

Rodney Street,
Land to the west of Rodney Street,
Manchester
M4 6JJ

CONDUCTED ON BEHALF OF:

Wates Construction Limited

OVERVIEW OF PROPOSED DEVELOPMENT

The proposed development is to consist of a new development, consisting of 2 apartment blocks and 10 Townhouses.

DETAILS OF PROPOSED DEVELOPMENT

Development Type:	new development
Proposed Building Height:	Block A – 8 Storey – 27.55m
	Block B – 5 Storey – 17.10m
	Townhouses– 3 Storey – Height 9.35m

Please refer to.

Plan A which highlights the proposed development's latest location, as noted below

Plan B the proposed site elevation

EXISTING BUILDINGS

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

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

COORDINATES

Prior to commencement of the survey, coordinates at the proposed 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 proposed 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.

<u>LOCATION</u>	<u>NATIONAL GRID REFERENCE</u>
Proposed Development Position	SJ 85296 98983
Winter Hill Transmitter	SD 66000 14400

PLAN A: THE PROPOSED DEVELOPMENT'S LOCATION



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PLAN B: THE PROPOSED ELEVATIONS

Block A



South Elevation - Planning
1:100

Block B



Townhouses

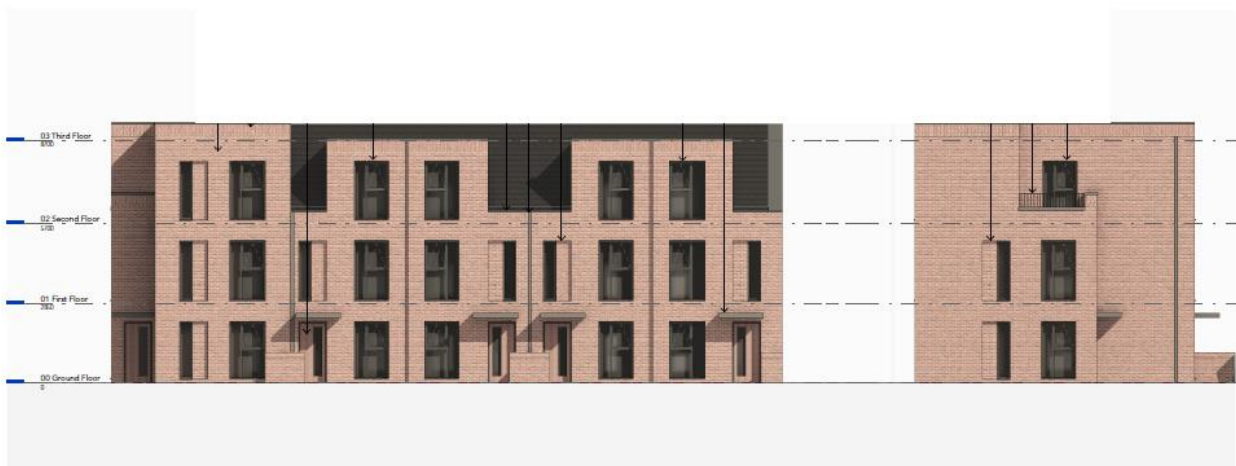


North Elevation - Planning

1 : 100

East Elevation - Planning

1 : 100



South Elevation - Planning

1 : 100

West Elevation - Planning

1 : 100

PHOTO A: The proposed development location



PHOTO B: View directly to the north of the proposed development



PHOTO C: View directly to the east of the proposed development



PHOTO D: View directly to the south of the proposed development



PHOTO E: View directly to the west of the proposed 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 southeast of the proposed development, approx. 15km away

The Winter Hill transmitter broadcasts 7 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 good. 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.

FM RADIO SERVICES

Listeners in the surrounding area to the proposed development are receiving their radio services from the Holme Moss transmitter, located to the northeast of the building/structure, approx. 25 km away at a compass bearing of 74 degrees

DAB RADIO SERVICES

Listeners in the surrounding area to the proposed development are receiving their radio services from the Sunley Building, (now city tower) Piccadilly transmitter, located to the west of the building/structure, approx. 1 km away at a compass bearing of 235 degrees.

FIELD SURVEY TEST RESULTS AND INFORMATION

TEST POINT 1

Location Wadeford Close
NGR: SJ 85296 98901
Alt: 52 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	24.7km
Proposed Development	355°	0.01 km

Visible Existing Aerial Arrays: 52 element aerals on 4m mast, wall mounted and directed towards the Winter Hill Transmitter.

Visible Existing Obstructions: Various multistorey buildings in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	65	39	33		-6	Pass
37	602.0	COM6	SD	72	45	33	-8		Pass
31	698.0	ARQA	SD	75	45	34	-8		Pass
32	562.0	BBCA	SD	76	34	33	-8		Pass
35	585.8	BBCB	HD	74	34	33		-6	Pass
24	498.0	LOC1	SD	59	32	30	-7		Pass
29	538.0	SDN	SD	75	45	34	-8		Pass
34	578.0	D3+4	SD	75	45	34	-8		Pass

Television reception is of an acceptable quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dBμV) FM	CN Db FM	Frequency DAB	Level (dBμV) DAB	CN Db DAB
BBC Radio 1	98.9	69	42	225.64(12B)	86	45
BBC Radio 2	89.3	66	40	225.64(12B)	86	45
BBC Radio 3	91.5	68	42	225.64(12B)	86	45
BBC Radio 4	93.7	67	41	225.64(12B)	86	45

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 1



TEST POINT 2

Location: Rodney Street
NGR: SJ 85360 98943
Alt: 52 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	24.8 km
Proposed Development	301°	0.01 km

Visible Existing Aerial Arrays: only satellite dishes visible.

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

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	43	28	21		-4	Marginal
37	602.0	COM6	SD	52	28	25	-7		Pass
31	698.0	ARQA	SD	53	30	30	-8		Pass
32	562.0	BBCA	SD	55	28	28	-8		Pass
35	585.8	BBCB	HD	44	28	25		-4	Pass
24	498.0	LOC1	SD	24	26	23	-7		Fail
29	538.0	SDN	SD	55	28	28	-8		Pass
34	578.0	D3+4	SD	50	33	30	-8		Pass

Television reception is of an acceptable quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dBμV) FM	CN Db FM	Frequency DAB	Level (dBμV) DAB	CN Db DAB
BBC Radio 1	98.9	70	44	225.64(12B)	85	44
BBC Radio 2	89.3	69	42	225.64(12B)	85	44
BBC Radio 3	91.5	68	43	225.64(12B)	85	44
BBC Radio 4	93.7	72	45	225.64(12B)	85	44

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 2



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TEST POINT 3

Location Mozart close
NGR: SJ 85349 98859
Alt: 51 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	24.7km
Proposed Development	330°	0.15 km

Visible Existing Aerial Arrays: Satellite.

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

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	63	36	32		-6	Pass
37	602.0	COM6	SD	70	42	32	-8		Pass
31	698.0	ARQA	SD	71	44	31	-8		Pass
32	562.0	BBCA	SD	73	32	32	-8		Pass
35	585.8	BBCB	HD	70	31	31		-6	Pass
24	498.0	LOC1	SD	55	30	30	-7		Pass
29	538.0	SDN	SD	71	44	32	-8		Pass
34	578.0	D3+4	SD	73	40	30	-8		Pass

Television reception is of a good quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dBμV) FM	CN Db FM	Frequency DAB	Level (dBμV) DAB	CN Db DAB
BBC Radio 1	98.9	71	44	225.64(12B)	85	44
BBC Radio 2	89.3	66	45	225.64(12B)	85	44
BBC Radio 3	91.5	70	44	225.64(12B)	85	44
BBC Radio 4	93.7	75	45	225.64(12B)	85	44

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 3



TEST POINT 4

Location Garforth Avenue
NGR: SJ 85422 98971
Alt: 52 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	24.7km
Proposed Development	286°	0.11 km

Visible Existing Aerial Arrays: none.

Visible Existing Obstructions: Various buildings in the general direction of the Winter Hill Transmitter.

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	48	28	24		-4	Pass
37	602.0	COM6	SD	52	28	25	-7		Pass
31	698.0	ARQA	SD	53	30	30	-8		Pass
32	562.0	BBCA	SD	55	28	28	-8		Pass
35	585.8	BBCB	HD	44	28	25		-4	Pass
24	498.0	LOC1	SD	39	26	23	-7		Marginal
29	538.0	SDN	SD	55	28	28	-8		Pass
34	578.0	D3+4	SD	50	33	30	-8		Pass

Television reception is of an acceptable quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dB μ V) FM	CN Db FM	Frequency DAB	Level (dB μ V) DAB	CN Db DAB
BBC Radio 1	98.9	70	42	225.64(12B)	75	45
BBC Radio 2	89.3	68	40	225.64(12B)	75	45
BBC Radio 3	91.5	69	44	225.64(12B)	75	45
BBC Radio 4	93.7	72	42	225.64(12B)	75	45

TEST POINT 5

Location Danesdale Drive
NGR: SJ 85504 98909
Alt: 50 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	310°	24.6km
Proposed Development	289°	0.23 km

Visible Existing Aerial Arrays: High Gain Antenna on 1m mast, mounted at rooftop height, directed towards the Winter Hill Transmitter.

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

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	64	35	32		-6	Pass
37	602.0	COM6	SD	70	44	30	-8		Pass
31	698.0	ARQA	SD	71	45	32	-8		Pass
32	562.0	BBCA	SD	69	31	31	-8		Pass
35	585.8	BBCB	HD	70	32	30		-6	Pass
24	498.0	LOC1	SD	55	28	26	-7		Pass
29	538.0	SDN	SD	71	44	32	-8		Pass
34	578.0	D3+4	SD	70	40	32	-8		Pass

Television reception is of an acceptable quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dB μ V) FM	CN Db FM	Frequency DAB	Level (dB μ V) DAB	CN Db DAB
BBC Radio 1	98.9	71	44	225.64(12B)	82	45
BBC Radio 2	89.3	70	42	225.64(12B)	82	45
BBC Radio 3	91.5	69	42	225.64(12B)	82	45
BBC Radio 4	93.7	70	42	225.64(12B)	82	45

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 5



TEST POINT 6

Location Kingham Drive
NGR: SJ 85419 98778
Alt: 50 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	24.7km
Proposed Development	329°	0.24 km

Visible Existing Aerial Arrays: High Gain Antenna on 1m mast, mounted at rooftop height, directed towards the Winter Hill Transmitter.

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

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	65	32	32		-6	Pass
37	602.0	COM6	SD	71	42	32	-8		Pass
31	698.0	ARQA	SD	72	45	34	-8		Pass
32	562.0	BBCA	SD	70	32	30	-8		Pass
35	585.8	BBCB	HD	71	32	30		-6	Pass
24	498.0	LOC1	SD	51	30	28	-7		Pass
29	538.0	SDN	SD	72	45	32	-8		Pass
34	578.0	D3+4	SD	69	38	34	-8		Pass

Television reception is of a good quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dB μ V) FM	CN Db FM	Frequency DAB	Level (dB μ V) DAB	CN Db DAB
BBC Radio 1	98.9	73	42	225.64(12B)	80	45
BBC Radio 2	89.3	70	40	225.64(12B)	80	45
BBC Radio 3	91.5	72	44	225.64(12B)	80	45
BBC Radio 4	93.7	72	44	225.64(12B)	80	45

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 6



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TEST POINT 7

Location: Firbeck Drive
NGR: SJ 85573 98782
Alt: 54 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	25.0 km
Proposed Development	306°	0.36 km

Visible Existing Aerial Arrays: High Gain Antenna on 2m mast, mounted at rooftop height, directed towards the Winter Hill Transmitter.

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

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dBμV)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	50	35	24		-4	Pass
37	602.0	COM6	SD	60	38	34	-8		Pass
31	698.0	ARQA	SD	57	35	31	-8		Pass
32	562.0	BBCA	SD	57	33	30	-8		Pass
35	585.8	BBCB	HD	60	34	30		-4	Pass
24	498.0	LOC1	SD	44	26	25	-7		Pass
29	538.0	SDN	SD	57	38	30	-6		Pass
34	578.0	D3+4	SD	60	37	31	-8		Pass

Television reception is of a good quality and strength

Channel	Frequency FM	Level (dBμV) FM	CN Db FM	Frequency DAB	Level (dBμV) DAB	CN Db DAB
BBC Radio 1	98.9	74	43	225.64(12B)	79	45
BBC Radio 2	89.3	71	41	225.64(12B)	79	45
BBC Radio 3	91.5	73	45	225.64(12B)	79	45
BBC Radio 4	95.1	74	45	225.64(12B)	79	45

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 7



TEST POINT 8

Location: Butler Street
NGR: SJ 85654 98723
Alt: 54 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	25.1km
Proposed Development	305°	0.40 km

Visible Existing Aerial Arrays: 10 element aerials on 1m mast, mounted at rooftop height, directed towards the Winter Hill Transmitter.

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

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	66	30	30		-6	Pass
37	602.0	COM6	SD	72	40	35	-8		Pass
31	698.0	ARQA	SD	74	45	34	-8		Pass
32	562.0	BBCA	SD	71	35	32	-8		Pass
35	585.8	BBCB	HD	74	34	32		-6	Pass
24	498.0	LOC1	SD	45	28	26	-7		Pass
29	538.0	SDN	SD	71	44	30	-8		Pass
34	578.0	D3+4	SD	69	35	34	-8		Pass

Television reception is of a good quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dB μ V) FM	CN Db FM	Frequency DAB	Level (dB μ V) DAB	CN Db DAB
BBC Radio 1	98.9	72	45	225.64(12B)	80	45
BBC Radio 2	89.3	71	42	225.64(12B)	80	45
BBC Radio 3	91.5	70	41	225.64(12B)	80	45
BBC Radio 4	95.1	73	44	225.64(12B)	80	45

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 8



TEST POINT 9

Location Old Mill Street
NGR: SJ 85665 98646
Alt: 55 m
Mast Height: 10 m

LOCATION	BEARING	DISTANCE
Winter Hill Transmitter	308°	25.2 km
Proposed Development	318°	0.52 km

Visible Existing Aerial Arrays: 10 element aerials on 0.5m mast, mounted at rooftop height, directed towards the Winter Hill Transmitter.

Visible Existing Obstructions: Various buildings/tower blocks in the general direction of the Winter Hill Transmitter

WINTER HILL TRANSMITTER - REPORT

Channel	Frequency	MUX	Format	Level (dB μ V)	CN dB	MER	VBER	LBER	Quality
55	746.0	COM7	HD	68	32	30		-6	Pass
37	602.0	COM6	SD	73	42	35	-8		Pass
31	698.0	ARQA	SD	76	45	35	-8		Pass
32	562.0	BBCA	SD	72	35	30	-8		Pass
35	585.8	BBCB	HD	76	35	32		-6	Pass
24	498.0	LOC1	SD	51	32	28	-7		Pass
29	538.0	SDN	SD	72	45	35	-8		Pass
34	578.0	D3+4	SD	70	38	36	-8		Pass

Television reception is of a good quality and strength

FM/DAB TRANSMITTERS – REPORT

Channel	Frequency FM	Level (dB μ V) FM	CN Db FM	Frequency DAB	Level (dB μ V) DAB	CN Db DAB
BBC Radio 1	98.9	77	45	225.64(12B)	79	27
BBC Radio 2	89.3	75	45	225.64(12B)	79	27
BBC Radio 3	91.5	72	44	225.64(12B)	79	27
BBC Radio 4	93.7	71	44	225.64(12B)	79	27

VISIBLE TV AERIAL LOCATED IN THE AREA OF TEST POINT 9



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CONCLUSIONS FOR BUILDING DEVELOPMENT

The proposed development is to be located at Land to the west of Rodney Street, Manchester. The development is to consist of Block A – 8 Storey – 27.55m, Block B – 5 Storey – 17.10m and Townhouses– 3 Storey – Height 9.35m.

Subsequently, the introduction of the proposed development will change the existing skyline which can result in causing an impact on the existing viewers' television reception.

By considering the proposed development's location and elevation the details collated during the desktop study and the results and information recorded during the field survey we were able to ascertain where the introduction of the proposed development has the potential to impact upon existing viewers' television reception.

In the case of the proposed development, we have highlighted a potential impact zone for terrestrial television reception shown on Map 1. The potential impact zone for terrestrial television reception covers an area to the southeast of the proposed development. Most of the potential impact zone covers the neighbouring properties directly to the Southeast, with the main affected location covering an area including parts of Jersey street (east), Mozart close, and Rodney street (south), and for these properties affected, mitigation may be required, Although we expect the overall impact to be small, as the new development is already in a 'shadow' of the 14 storey building at the top of Rodney street (Tribe building, Ancoats) and this building is already blocking the signal to a degree in this south-easterly direction.

We have not indicated a potential impact zone for satellite television reception as there are no buildings directly to the north that would be affected from the introduction of the proposed development

We recommend that funds are available to deal with the investigation of any reported interference and to enable subsequent mitigation requirements. We advise that the situation regarding television and satellite reception is monitored closely during the construction and any reports of interference are investigated promptly.

Please note that when tower cranes are used on site, they have the potential to cause interference on a wider scale for the duration of time they are on site.

Please also refer to the mitigation section of this report, on the following page for remedies to rectifying terrestrial television reception issues.

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 the 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 in 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 using the Freesat platform can assist in rectifying reception issues.

To provide satellite television reception for individually 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.

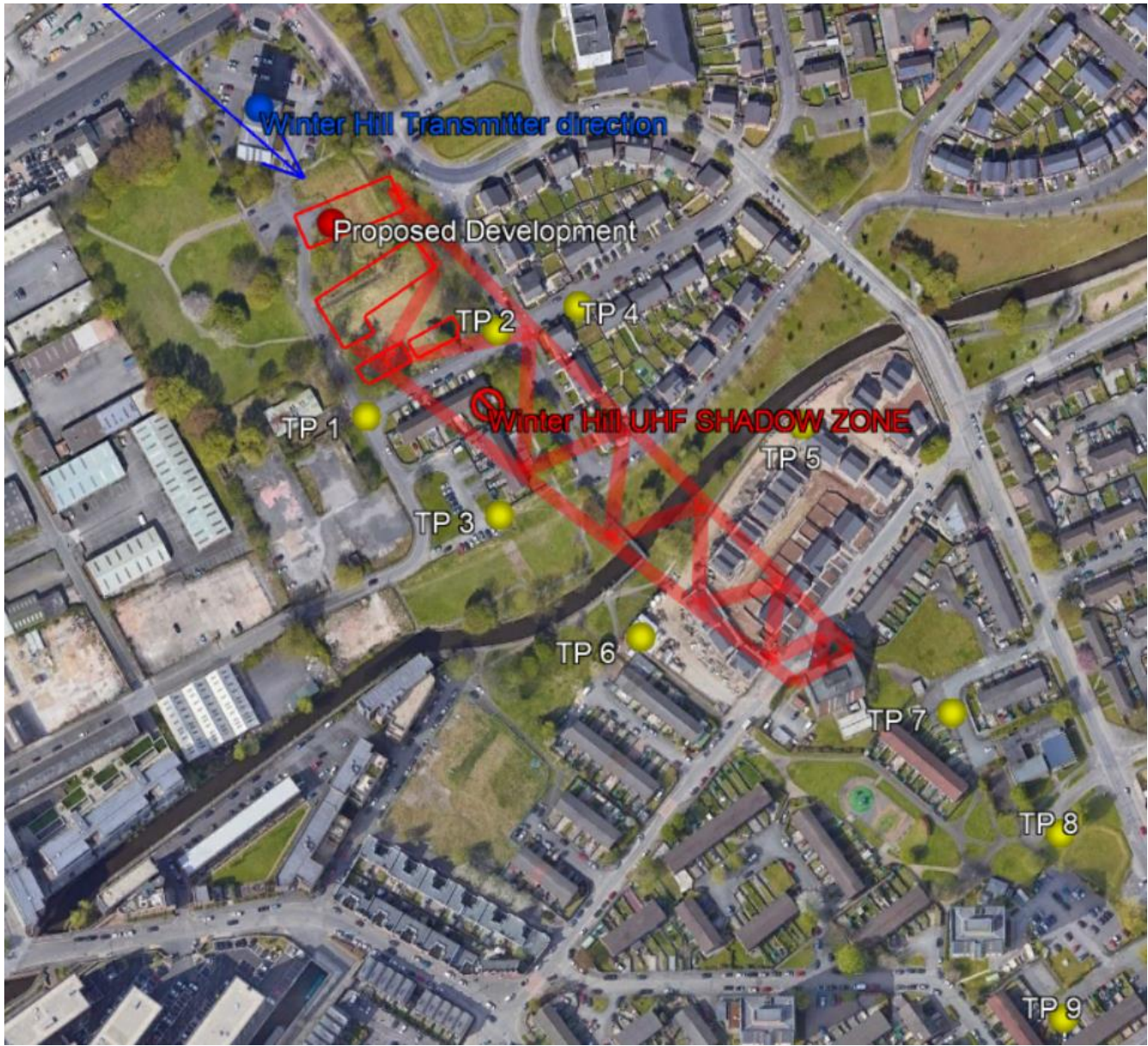
Increase in height of the satellite antenna to achieve a clear line of sight to the satellite.

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
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