GTech Surveys Limited

College View, Moss Lane East

Broadband Connectivity Assessment

CHANGE HISTORY

Issue	Date	Details of Changes
0.0	03/06/2024	Working draft
0.1	01/07/2024	First draft issue
1.0	24/01/2025	Final issue - document updated to reflect new scheme. General updating and editing
Author: G Phillips		Reviewer: O Lloyd

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In addition to radio interference modelling services and television reception surveys, we produce EIA and ES Telecommunications Chapters (also known as an 'Electronic Interference Chapter'); satisfying the requirements of Part 5, Regulation 18 (Parts 5a and 5b) of The Town and Country Planning EIA Regulations 2017. We peer review ES and EIA work, liaising with telecommunications providers (Arqiva, BT etc.) and advise developers with respect to associated Section 106 (Town and Country Planning Act 1990) and Section 75 (Town and Country Planning (Scotland) Act 1997) agreements.

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Executive Summary

A desk-based assessment has been undertaken to determine the current availability of broadband services near to and adjacent to the proposed College View, Moss Lane East development. Under Manchester City Council (MCC) planning guidance, certain sized developments require a broadband connectivity assessment. Further guidance can be found in this document; "*Full, Outline, Reserved Matters & Variation/Removal of Conditions Planning Applications - Is Your Application Valid?*", September 2018 (revised January 2020), MCC. The requirement states;

Broadband Connectivity Assessment

> *All new build residential developments must incorporate measures to facilitate digital connectivity for all new build residential properties having regard to the Data Ducting Infrastructure Guidance produced by the Department for Communities and Local Government. (Section 10 - National Planning Policy Framework (NPPF))*

The findings of this broadband connectivity assessment indicate that existing broadband infrastructure and good connectivity is already available in the study area, with existing fibre installed along streets adjacent to the Site. Fast download speeds are likely to be experienced. It is suggested that the developer engages with BT Openreach to facilitate a connection to their fibre network.

The developer will commit to enable the Proposed Development for robust connectivity and future-proof upgrading by following the statutory guidance, Approved Document R volume 1: Physical infrastructure and network connection for new dwellings (2022 edition). This presents the guidance covering the infrastructure for electronic communications requirements of the building regulations as set out in Part R of Schedule 1 to the Building Regulations and in a number of specific building regulations.

This broadband connectivity assessment can be used for reference and to accompany the College View, Moss Lane East planning application submission.

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1 - Introduction

This broadband connectivity assessment has been prepared by GTech Surveys Limited on behalf of Cheshire Homes Group ("the Applicant") in support of a full planning application for the demolition of the existing building on the Site and the construction of a new purpose-built student accommodation ("PBSA") development at College View, 410 – 418 Moss Lane East, Manchester, M14 4PQ. The assessment details the findings of licensed and other available information to address requirements regarding potential broadband connectivity for the Proposed Development.

The Proposed Development

The Proposed Development comprises of the demolition of 410-418 Moss Lane East and erection of part five, part three storey building for use as Purpose Built Student Accommodation ("PBSA"), associated landscaping, servicing, cycle parking and other associated works.

The Site

The Site is located on Moss Lane East to the northern edge of Moss Side and has a total Site area of 1575 m^2 (0.1575 ha).

The Site sits at the edge of the Higher Education Corridor defined by MCC and is bounded by Moss Lane East to the north and Acomb Street to the west. To the immediate south of the Site are common private sector student houses and flats. 2km to the north of the Site are the main campus of the University of Manchester (UoM) and Manchester Metropolitan University (MMU) Oxford Road campus.

The immediate context of the Site comprises large amount of residential located predominantly to the south. To the north of the Site is generally educational use associated with UoM and MMU. To the northeast of the Site lies Whitworth Park (over the road). Amenities such as retail and commercial spaces are scattered to the south of the Site.

A three-storey apartment building (bound by Moss Lane East to the north and Acomb Street to the west) currently occupies the Site.

The Site's location is shown in Figure 1.

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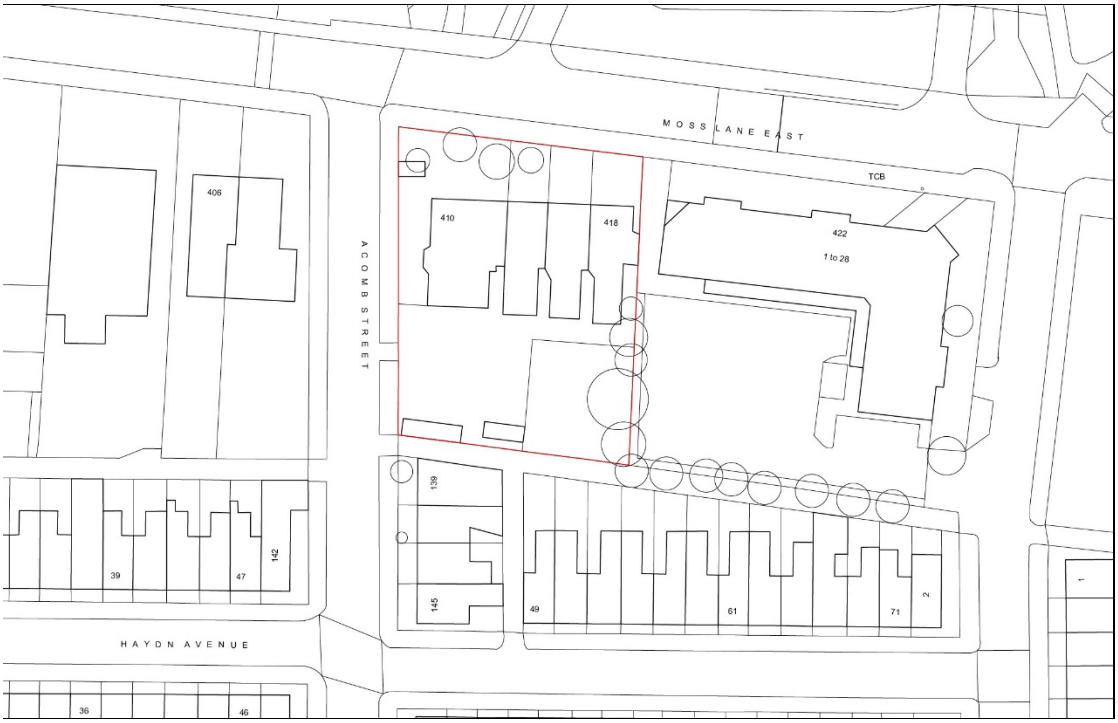


Figure 1 - The location of the Site (delineated in red)

The Assessment Requirements

Manchester City Council (MCC) requires applications for certain sized developments to include a broadband connectivity assessment. Further guidance can be found in the document; "*Full, Outline, Reserved Matters & Variation/Removal of Conditions Planning Applications - Is Your Application Valid?*", September 2018 (revised January 2020), MCC. The requirement states;

Broadband Connectivity Assessment

All new build residential developments must incorporate measures to facilitate digital connectivity for all new build residential properties having regard to the Data Ducting Infrastructure Guidance produced by the Department for Communities and Local Government. (Section 10 - National Planning Policy Framework (NPPF))

Additionally, in Places for Everyone Joint Development Plan Document 2022 - 2039, March 2024, it is stated in Policy JP-C2: Digital Connectivity, Part 2 that;

Requiring all new development to have full fibre to premises connections, unless technically infeasible and/or unviable, and to incorporate multiple-ducting compliant with telecoms standards, to facilitate future-proof gigabit-capable network connections. It is expected that internet connections will be operational and immediately accessible to network providers when occupiers move into new properties

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It is considered that all new build developments must incorporate measures to facilitate digital connectivity for all new build residential properties having regard to the Data Ducting Infrastructure Guidance produced by the Department for Levelling Up, Housing and Communities (Section 10 - National Planning Policy Framework (NPPF)[1]).

Legislation

The Building etc. (Amendment) (England) (No. 2) Regulations 2022 came into force on 26 December 2022. These regulations introduce gigabit broadband infrastructure and connectivity requirements for the construction of new homes in England. They amend The Building Regulations 2010 and The Building (Approved Inspectors etc.) Regulations 2010.

Statutory Guidance

The regulations are supported by statutory guidance. Approved Document R Volume 1[2] provides information to assist developers with compliance with the requirements to install gigabit-ready physical infrastructure and gigabit-capable connections for new homes.

The Approved Document R is in a two-volume format:

Volume 1: Physical infrastructure and network connection for new dwellings provides guidance on:

'Requirement RA1: Gigabit-ready physical infrastructure'
'Requirement RA2: Connection to gigabit-capable network'

Volume 1 includes key terms at Appendix A, and a model connectivity plan at Appendix B.

Volume 2: Physical infrastructure for high-speed electronic communications networks provides guidance on:

'Requirement R1: High-speed-ready in-building physical infrastructure'

1 - NPPF Section 10, December 2024, (Department for Levelling Up, Housing and Communities)

10. Supporting high quality communications

119. Advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections. Policies should set out how high-quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time; and should prioritise full fibre connections to existing and new developments (as these connections will, in almost all cases, provide the optimum solution).

2 - https://www.gov.uk/government/publications/infrastructure-for-electronic-communications-approved-document-r

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This covers requirements to install high-speed-ready infrastructure in buildings that are outside of the scope of requirements RA1 and RA2. Volume 2 also includes key terms at Appendix A.

Scope of the requirements

Requirements RA1 (to install gigabit-ready physical infrastructure) and RA2 (to install gigabit-capable connections) apply to the erection of new dwellings in England; that is, the construction of a self-contained building or part of a building to be used as a new residential dwelling. More detail on the buildings in scope of the requirements is available in Approved Document R Volume 1 (paragraphs 1.2 to 1.5 and 2.9 to 2.11), while detail for buildings that are not in scope of Requirements RA1 and RA2 is available in paragraphs 1.6 to 1.7 and 2.12).

Details

Guidance covering the infrastructure for electronic communications requirements of the building regulations as set out in Part R of Schedule 1 to the Building Regulations and in a number of specific building regulations.

The current technical guidance is contained in:

Approved Document R volume 1: Physical infrastructure and network connection for new dwellings (2022 edition) applies to the erection of new dwellings[3].

Developer's Guidance and Responsibility - At the Pre-Application Stage

Broadband connectivity is most helpfully and effectively raised at the earliest possible stage of the planning process. This can help to ensure that the need to provide superfast broadband connectivity is considered in prospective applicants' layout planning and costings before proposals reach the planning application stage. At the pre-application stage, prospective applicants:

- Will be reminded of the requirements of local guidance and Section 10 (NPPF) concerning broadband connectivity, i.e. the provision of superfast broadband connectivity;

- Will be advised that occupiers of the Proposed Development should be able to arrange access to superfast broadband immediately at the point of occupation; and

- Will be encouraged to liaise with broadband providers at an early stage to identify whether the Proposed Development could be connected to

3 - https://assets.publishing.service.gov.uk/media/637f356ee90e072342b82d4e/ADR1.pdf

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existing infrastructure or whether additional infrastructure would be required, and how this would be provided.

Developer's Guidance and Responsibility - At the Application Stage

Applications for planning permission for major development should be accompanied by evidence of the superfast broadband connectivity of the site, such as this report. This should take the form of a connectivity assessment, or similar proof, from one or more broadband infrastructure providers evidencing the availability of at least superfast broadband speeds. This can be submitted as part of a sustainability statement accompanying the application. Where superfast broadband connectivity is available, the development should include the infrastructure to connect to this service and make it available to occupiers. Where superfast broadband connectivity is not currently available:

- Applications should be accompanied by evidence that discussions have been held with a range of providers to upgrade infrastructure to deliver superfast broadband or full fibre connections.

- Where one or more providers have agreed to provide superfast broadband connectivity, the development should be designed to connect to this service and make it available to occupiers.

- Where no provider has agreed to provide superfast broadband connectivity, the development should incorporate additional dedicated telecommunications ducting to enable the provision of superfast broadband in future.

The Broadband Connectivity Assessment

This assessment can be used for reference and to support the planning application submission and has been prepared by GTech Surveys Limited for the applicant. This assessment was initiated during June 2024 and last updated during January 2025 to provide information regarding the connectivity around the Site and the availability of local broadband services.

This report follows the following structure:

Chapter 1 introduces the work, the assessment's requirements, the Proposed Development and Site

Chapter 2 lists which external infrastructure telecommunications utility providers are operating in the study area, with which technology and what likely upload and download speeds are available

Chapter 3 describes the existing local BT Openreach infrastructure around the Site (as of 1 July 2024)

Chapter 4 describes the existing local Virgin Media infrastructure around the Site (as of 1 July 2024)

Chapter 5 presents the conclusion

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2 - External Infrastructure Telecommunications Utility Providers

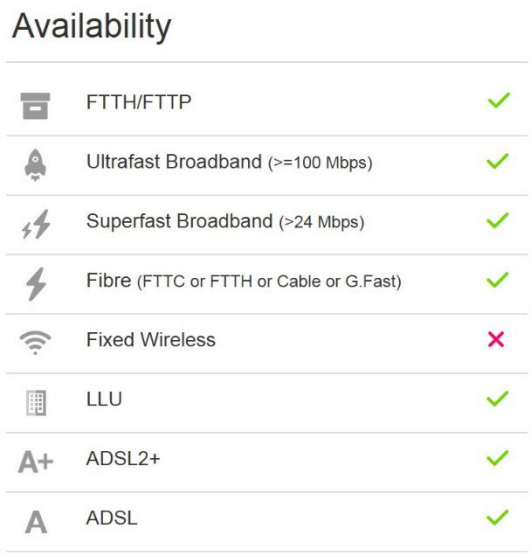
Existing Broadband Providers in the Study Area

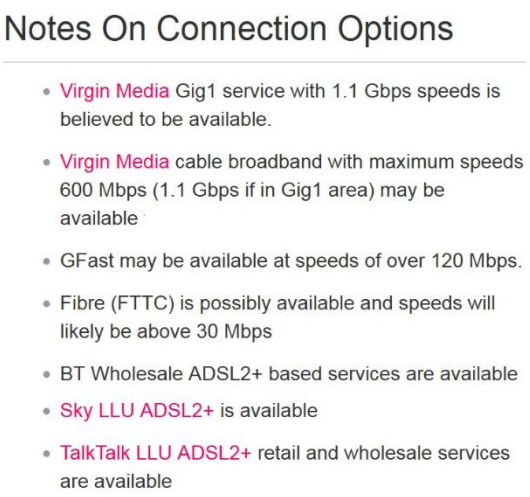
A number of telecommunications companies and broadband providers exist and operate in Manchester. Database integration indicates that the following providers are active around the Site's postcode centroid.

Provider	Type of Service[4]
BT Wholesale	ADSL
BT Wholesale	ADSL Max
BT Wholesale	WBC (21CN)
BT Wholesale	SDSL
BT	FTTC
Sky Broadband	LLU
TalkTalk (CPW)[5]	LLU
Vodafone	LLU

Potential Download Speeds

The postcode centroid is likely to be very well served due to existing fibre in the area.





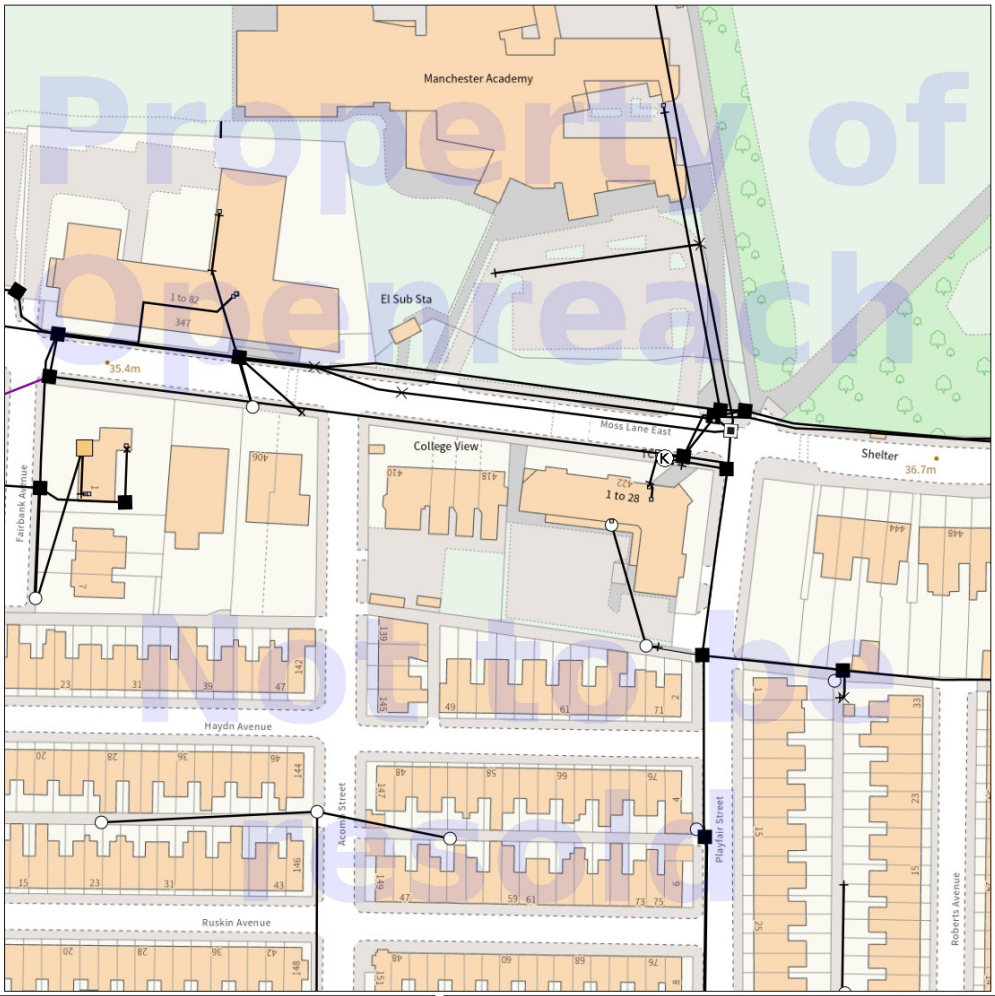
4 - Appendix - Broadband Connection Definitions for definitions

5 - Car Phone Warehouse (CPW)

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3 - BT Openreach External Infrastructure Availability

Maps on Demand Plant Information Reply



Property of Openreach Not to be resold

IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made newar to BT apparatus which may exist at various depths and may deviate from the marked route.

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KEY TO BT SYMBOLS

	Planned	Live
PCP		
Pole		
Box		
Manhole		
Cabinet		

Change Of State	+	Hatchings			
Split Coupling	×	Built			
Duct Tee	▲	Planned			
Building		Inferred			
Kiosk	K	Duct			

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

	Pending Add	In Place	Pending Remove	Not In Use
Power Cable				
Power Duct				N/A

BT Ref : FXH13134X
Map Reference : (centre) SJ8465095678
Easting/Northing : (centre) 384650,395678
Scale : 1:250
Issued : 01/07/2024 13:13:23

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

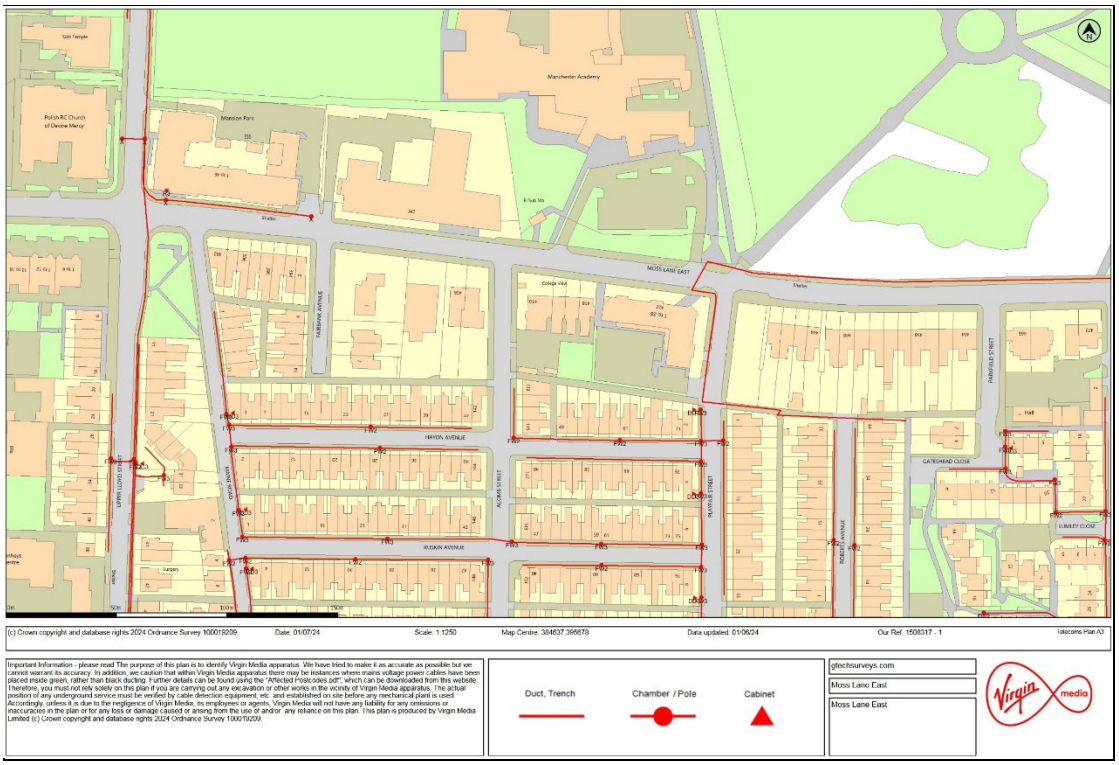
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BT Openreach had a universal service obligation (USO) granting remote households the right to request broadband speeds of at least 10 Mbit/s by 2020. As a result of this obligation, BT Openreach has been aggressively installing new fibre and broadband infrastructure throughout the UK, enhancing coverage in major cities.

Based on BT database interrogation on 1 July, there is existing BT Openreach (fibre) infrastructure surrounding the Site past the northern edge of the Site itself.

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4 - Virgin Media External Infrastructure Availability



Based on Virgin Media's reply on 1 July 2024, there is existing Virgin Media infrastructure near to the Site, but not to the Site itself.

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5 - Conclusions

A desktop study has been undertaken to assess the potential for broadband connectivity to the proposed College View, Moss Lane East development. The study has utilised licensed information and current technical data regarding connectivity from a number of sources.

The area already is likely to have excellent download speeds (expected to be at least 100 megabits per second). Only BT Openreach has existing fibre infrastructure immediately adjacent to the Site. Whilst Virgin Media has some existing infrastructure in the study area, it is not to the Site itself or practically near to the Site to enable a feasible connection. BT Openreach is able to enable a full fibre connection for the Proposed Development.

It is recommended that the developer engage with a broadband infrastructure provider in order to establish the most optimal data infrastructure solution for the Proposed Development. It is considered that BT Openreach offers the most optimal connection, due to the beneficial location of its network relative to the Site. BT Openreach can be contacted via their website[6].

Full fibre connections represent the most future-proof form of infrastructure. New development should look to increase the spread of full fibre connections, which have the potential to boost the city's economy; help businesses grow and be more productive; help Manchester compete with other cities and provide more symmetrical upload / download speeds for residents and businesses. Full fibre connections also offer greater reliability and lower energy / maintenance costs.

The developer will commit to enable the Proposed Development for robust connectivity and future-proof upgrading by following the statutory guidance, Approved Document R volume 1: Physical infrastructure and network connection for new dwellings (2022 edition). This presents the guidance covering the infrastructure for electronic communications requirements of the building regulations as set out in Part R of Schedule 1 to the Building Regulations and in a number of specific building regulations.

This broadband connectivity assessment can be used for reference and to accompany the proposed College View, Moss Lane East development planning application submission.

6 - https://www.openreach.com/building-developers-and-projects/fibre-for-developers/registering-your-site

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Appendices

Broadband Connection Definitions

Data Ducting Infrastructure for New Homes - Guidance Note, March 2008, Department for Communities and Local Government

Planning Policies - National Planning Policies

Local Planning Requirements

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Broadband Connection Definitions

ADSL - Asymmetric Digital Subscriber Line broadband is a connection provided over home telephone lines. Openreach owns the UK's landline infrastructure, so when you have an ADSL connection, you need to rent your phone line from Openreach. If you already have an existing phone line, the broadband is added onto the package. Openreach was previously owned by BT, but ADSL packages can be sold by providers other than BT through a process known as local loop unbundling (LLU). This means that a secondary provider, for example Plusnet or TalkTalk, put their own software in the telephone exchanges and rent line and exchange space from Openreach. Although not as fast as fibre broadband, ADSL provides a high-quality, reliable connection. But if you live far away from your telephone exchange, or if the cable has degraded, then speeds can drop dramatically.

FTTB (fibre to the building/basement) - Fibre-optic cables run all the way to your premises, which is why this is sometimes called **FTTP** (fibre to the premises). For those in flats in a large building, the fibre terminates at the building rather than the individual dwelling. It still provides very fast speeds.

FTTC (fibre to the cabinet) - Fibre-optic cables run all the way to the cabinet in the street, which can be up to 300m away. The cabinet is connected to the property with regular copper wires, which results in a loss of speed. This is the most common connection.

FTTH (fibre to the home) - Fibre-optic cables run all the way to the outside of the property. This is the quickest service, delivering speeds of up to 900Mbps, but it's not widely available.

FTTN (fibre to the node) - Roughly the same as above, only the street cabinet can be further away; up to several km away, with the rest of the distance to the property being covered by regular copper wiring.

LLU - LLU stands for local loop unbundling and applies to ADSL (BT line) internet connections. A 'local loop' is another term for the actual cable through which a user will receive broadband and telephone calls.

SDSL - A symmetric digital subscriber line is a digital subscriber line that transmits digital data over the copper wires of the telephone network, where the bandwidth in the downstream direction, from the network to the subscriber, is identical to the bandwidth in the upstream direction, from the subscriber to the network.

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21CN wholesale broadband products - There are two main flavours of 21CN broadband product, which are summarised below:

IPStream Connect - A 21CN variant of the existing IPStream product, with all of the same options and pricing.

Wholesale Broadband Connect (WBC) - The broadband product offers up to 24Mbps ADSL2+, QoS and considerably more flexibility for ISPs. In addition to WBC, there also exists WBMC (Wholesale Broadband Managed Connect) and WBCC (Wholesale Broadband Connect Converge).

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Data Ducting Infrastructure for New Homes - Guidance Note, March 2008, Department for Communities and Local Government

With respect to the internal layouts and necessary infrastructure to provide connectivity in the Proposed Development, guidance has been published. The recommendations presented to the developer are specified in “Data Ducting Infrastructure for New Homes - Guidance Note”, March 2008, Department for Communities and Local Government.

This presentation by Virgin Media provides an excellent visual guide to how installations should be planned -

https://www.virginmedia.com/content/dam/virginmedia/dotcom/images/shop/downloads/New-Build-Handbook-v1-63.pdf

2.3 Internal Infrastructure

2.3.1 Understanding the needs

Although this document is intended to provide guidance with respect to data services it is important that the support of such services within the dwelling be considered in the wider context of other cable distribution requirements. Appendix C.2 identifies some of the equipment that may require cabling within a typical dwelling. In summary these may be considered as:

• Communications, entertainment and other equipment that require broadband or at least basic internet connectivity. The connection of such equipment is the prime focus of this guidance

• Other equipment that may require an external network connection other than the internet

• Systems and equipment that require cabling within the dwelling but may or may not have any need for external connectivity.

Equipment within the dwelling may employ a wide range of cabling of both a standard and proprietary type. Some may also connect using a wireless technology. Both cabling and wireless solutions are evolving, and any internal infrastructure will need to offer sufficient capacity and flexibility to meet future requirements.

It should be noted that some of the data connectivity requirements within a dwelling may be met using a wireless rather than cabled solution. The use of wireless technologies is outside the scope of this document. However, ducting is still required to support cabling to wireless hardware.

It is clearly impossible to pre-cable a dwelling to support all possible applications. Indeed, the current provision of telephone and television sockets in homes is often inadequate and lacking in flexibility. The result is that many

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dwellings have extensive cabling that is often surface mounted or trailed across floors.

2.3.2 What is required

Occupants of dwellings are likely to require:

• Data sockets at ‘useful locations’ throughout the dwelling

• A ‘readily accessible’ location where network equipment can be installed with a simple ‘user-friendly’ method of connecting the network equipment to ‘live’ data sockets

• Mains electricity sockets that are located near the data sockets.

The possibility of installing data sockets at ‘useful locations’ will depend on the nature of the dwellings and the type of occupancy. However, diverse user needs can only be met by a flexible infrastructure that will allow sockets to be readily installed as and where required.

Such a flexible infrastructure would also offer the potential for supporting other cabling distribution requirements. It is not envisaged that developers install data sockets, data cabling or the associated network equipment although some may choose to do so. Rather developers should install internal ducting that enable the later installation of data cabling, faceplates and sockets, and network equipment with minimal disturbance to either previously installed cables or the fabric of the building. The aim should be to facilitate cable installation by an electrician or a qualified competent person.

The internal infrastructure should be limited to the supporting faceplates and sockets at ‘normal height’ but consideration should be given for sockets and faceplates that maybe located at a higher location within the dwelling to facilitate a wireless solution or wall mounted media systems such as a flat screen television. The internal infrastructure should also be designed to support the installation of devices at ceiling level such as sensors for home security and telecare and ceiling mounted loudspeakers.

2.3.3 Topology and layout

The following issues need be considered in determining the topology and layout of the internal infrastructure for a dwelling:

• Access to the external infrastructure via an external terminal box

• The possible requirement to later accommodate a joint between external and internal grade cabling

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• The location of an equipment cabinet that may later accommodate equipment to support the distribution of data services within the dwelling (see Appendix C.2)

• The likely location of any television aerials/dishes, coax and primary sockets of the type often installed by developers. Such consideration should include the needs of digital television and the possible use of a shared television reception system (see Appendix C.2)

• The likely location of any standard telephone sockets and wiring of the type often installed by developers

• Locations where users may realistically be expected to require a data connection. This needs to be considered in determining the size of the ducting to the areas within a dwelling

• The cable installation requirements (which are likely to be not fully known at the time of infrastructure design and construction) including:

- the number of cables per duct (can be estimated as noted in previous point)
- the length of cable runs – a maximum of 90m from the equipment cabinet is recommended for ‘standard’ data cables (reference Appendix B.2)
- cable installation requirements including the minimum bending radius (see guidance based on cabling in Appendix D.2) will impact of duct sizing, types of bends and access requirements.

From the above it can be seen that ducts should be routed from an equipment cabinet (located near to the external infrastructure) to at least the main living areas, kitchen and the bedrooms. The ducts should not be restricted to data network use and suitable access points should be included to enable the ducts to be used for other cabling applications (excluding power).

2.3.4 Terminal box

An external terminal box should be installed at each dwelling house or multi occupancy dwelling to facilitate cable. The terminal box may also be required to accommodate joints between internal and external grade cables. The terminal box should be located such that cables can readily pass through the wall to the equipment cabinet.

The terminal box should have minimum dimensions of 300mm height by 300mm width by 150mm depth. The terminal box should have a full-size door (i.e. 300mm by 300mm) that should be lockable, ideally with a standard service key. The terminal box should be designed for external mounting and constructed to withstand minor impacts. In some developments, depending on the location, ‘terminal boxes’ may be installed as a matter of course to aid in the delivery of local telecommunications and TV-based services. They may be installed by service providers or developers. This document does not rule out

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the use of these ‘terminal boxes’ for the above use, but it is recommended that minimum specifications in this guidance be adhered to and ownership and access rights considered.

2.3.5 Equipment cabinet

An equipment cabinet should be installed in each dwelling. The equipment cabinet may be required to later accommodate network termination and network distribution equipment installed by a data service provider and/or resident. This is considered further in Appendix C.2. The equipment cabinet should be located in a dry area that will not be subject to environmental extremes. This essentially dictates a location within the dwelling. Ideally the equipment cabinet should be located to align with the entry into the dwelling of the duct from the terminal box. The equipment cabinet should also be easily accessible by residents including those with disabilities (in accordance with the appropriate Building Regulations/ Standards). The equipment cabinet should have minimum dimensions of 300mm height by 300mm width by 150mm depth. However, a larger size equipment cabinet would be preferable and may indeed be essential to support the cable patching requirements in larger dwellings.

The equipment cabinet should have a full-size door (i.e. 300mm by 300mm) that allows easy access for residents or suppliers to draw cables from. The equipment cabinet should be lockable using a manual locking mechanism that is easy to use by residents. It is not recommended that the equipment cabinet is locked using a key that can be removed.

The equipment cabinet should be specifically designed to accommodate network equipment, patch panels and a mains power strip. It should be constructed to facilitate the connection of the ducting detailed above and should be ventilated. Any mains distribution strip must be installed by a qualified competent person in compliance with the appropriate regulation/standard.

The equipment cabinet should be constructed to withstand minor impacts. The equipment cabinet may be required to house wireless network equipment and therefore should not be constructed from a material that will impact the performance of the wireless network.

2.3.6 Building ducts

This document is not intended to provide guidance on specific types of ducts in new and existing buildings. There is likely to be a compromise between cost, aesthetics, flexibility and ease of access. Options that developers may consider, include:

- Vertical duct concealed with other services in riser
- Ducts in-wall with possibly predefined access and socket positions
- Dado ducting
- Skirting ducting (if not intended for sockets)
- Simple surface mounted ducting.

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The ducts should be installed such that later cabling, and associated faceplates and sockets, can be installed with minimal disturbance to either previously installed cables or the fabric of the building. The aim should be to facilitate cable installation by an electrician or a qualified competent person. Developers should note that the type and specification of cabling used in dwellings may change. The cable specification upon which this guidance is based (Appendix D.2) should therefore be confirmed with the cable installer or cable vendor. The size of ducts required would depend on the number and diameter of cables that are likely to be installed at any point. This in turn will be impacted on by the topology of the infrastructure which itself will depend on the design of the building and the availability of duct routes. It is therefore not considered appropriate to specify duct sizes in this document. However, for guidance the following duct cable capacities are offered:

• Main ducts (that run from the equipment cabinet both vertically and horizontally) should have a minimum cross-sectional area of 800mm2, with the smallest dimension being 20mm (i.e. a 20mm x 40mm duct)

• Other ducts that spur from main ducts to each room should have a minimum cross sectional area of 400mm2, with the smallest dimension being 20mm (i.e. a 20mm x 20mm duct).

Developers are advised to employ larger ducts than specified above where space and / or dwelling construction permits giving consideration to the maximum number of sockets that may be wired in each area/room served. The ducts should enable cables to be installed with a minimum (long term) bending radius of 60mm.

Bends in the ducts should be kept to a minimum. Access points should be provided where there are multiple bends or bends greater than 45 degrees. Access points to under floor horizontal ducting should remain available through floorboards or other floor components. The ducts for data services should be separate from main electricity cables and comply with cable separation and routing standards. Where a vertical duct runs between floors the relevant provisions of the Building Regulations/ Standards should be followed, notably with respect to fire safety, resistance to moisture and resistance to sound.

Ducts should be positioned is such a way that damage from ‘DIY’ is minimised. A similar approach to the best practice installation of electrical cables and sockets should be considered. The ducts should enable ‘standard size’ face plates and data sockets to be readily installed for example:

• By removing/cutting a section of ducting to directly insert a faceplate – using ducting that has ideally been designed for the purpose

• Locating faceplates (with appropriate back boxes) adjacent to accessible ducting.

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Data sockets (and other sockets supported by the internal infrastructure) must be located at a height above finished level floor that is in accordance with Building Regulations/Standards. Any data sockets located in the loft area should be located in such a position as not to put the resident at risk from trailing cables etc. This document does not provide any guidance on the installation of mains electricity cabling and sockets. However, developers need to recognise that the quantity and location of power sockets may be an issue given the provision of a flexible data services infrastructure. Developers should therefore consider options for a more flexible power provision in accordance with Building Regulations/ Standards.

2.3.7 Multi-dwelling buildings

The above guidance for a dwelling house also applies to multi-dwelling buildings such as flats or maisonettes with the following exceptions. Each dwelling within the building could have a separate equipment cabinet or a cabinet per floor in a public area. The dwelling ducting from the equipment cabinet should not be routed outside of the dwelling served. The duct(s) from the terminal chamber should be routed to the equipment cabinets in a common duct with controlled access and restrictions allowing only authorised person's access. The common duct may be routed vertically and/ or horizontally. The common duct should have a minimum cross-sectional area of 2000mm2, with the smallest dimension being 40mm (i.e. a 40mm x 50mm duct). This size should serve up to 15 dwellings, but larger duct should be employed if space permits. The common duct cross sectional area should be increased by 2000mm2 for each additional 15 dwellings.

Where a common duct runs between floors, or horizontally between dwellings, the relevant provisions of the Building Regulations/ Standards should be followed. This is especially important with respect to fire safety, resistance to moisture, gas leaks, air tightness and resistance to sound.

2.3.8 Boundaries

At each dwelling the boundary between the external and internal infrastructure should be adjacent to the place where the data service providers' cable may later enter the building. The resident would remain the owner of the ducting that houses the data cable from the service provider. In a multi-dwelling building the boundary between the external and internal infrastructure should be adjacent to the place where the data service providers' cable may later enter the building. The landlord shall therefore have responsibility for a part of the internal infrastructure (including the terminal box and common duct) that may accommodate cables and network equipment that is owned by a data service provider. Subject to the terms of the lease of multi-dwelling buildings, the landlord may also be responsible for the equipment cabinet and ducting within each dwelling. Boundaries for ducting between two premises start and end at the dividing wall. The ownership of the infrastructure within the ducting may remain with the service provider or the original infrastructure owner.

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Planning Policies - National Planning Policies

National Planning Policy Framework (NPPF), Department for Levelling Up, Housing and Communities, December 2024

10. Supporting high quality communications

119. Advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections. Policies should set out how high quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time; and should prioritise full fibre connections to existing and new developments (as these connections will, in almost all cases, provide the optimum solution).

Local Planning Requirements

Manchester City Council (MCC), "Full, Outline, Reserved Matters & Variation/Removal of Conditions Planning Applications - Is Your Application Valid?", September 2018 (revised January 2020), MCC

Broadband Connectivity Assessment

All new build residential developments must incorporate measures to facilitate digital connectivity for all new build residential properties having regard to the Data Ducting Infrastructure Guidance produced by the Department for Communities and Local Government. (Section 10 NPPF, above)

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The findings in this document were correct and accurate on the day of draft issue (1st July 2024) but cannot be guaranteed to remain the same for any defined period. This report assumes that there will be changes to telecommunications networks and other surrounding structures, which may result in different broadband technologies becoming unavailable or degraded. GTech Surveys Limited will not be held liable for costs of any requirement to conduct more diagnostic assessments due to changes within the surveyed environment, or due to changes in networks in the study area. BT Openreach information is valid only for 90 days from issue.

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Any questions or matters arising from this Report should be addressed in the first instance to the Project Manager.

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