

Telecommunications Connectivity

Fixed Network and Mobile Coverage Assessment

Rivergate
 Newbury Business Park
 London Road
 Newbury RG14 2PZ



FIXED NETWORK SERVICES

BUILDING ENTRIES	
DUCT ENTRIES	3No. TOTAL
LOCATION	GROUND FLOOR RISER CUPBOARD
OTHER	N/A
SECURITY	EXCELLENT
OWNERSHIP	BT / VODAFONE
DIVERSITY AVAILABLE	YES - BY CARRIER
CAPACITY	SPARE CAPACITY AVAILABLE

CARRIERS	
BT OPENREACH	IN BUILDING
VODAFONE	IN BUILDING
VIRGIN MEDIA	LOCAL ENVIRONS

SERVICES	
BT OPENREACH	COPPER + FIBRE SERVICES – GROUND FLOOR RISER CUPBOARD ADSL BROADBAND AT 5-11Mbps
VODAFONE	FIBRE SERVICES IN BUILDING - BFP's

ADDITIONAL SERVICES	
LANDLORD	MANAGED FIBRE SERVICES AVAILABLE TO ALL AREAS / PLUS WI-FI (AWAITING INSTALLATION)
OTHERS	N/A

BUILDING DISTRIBUTION	
RESILIENCE	SECURE INTAKE LOCATION IN GROUND FLOOR RISER CUPBOARD
RISERS	SECURE RISER AVAILABLE – RESTRICTED ACCESS
SECURITY	EXCELLENT SECURITY THROUGHOUT, INTAKE POSITION IN RESTRICTED ACCESS AREA
RISER SPACE	EXCELLENT SPACE FOR ADDITIONAL SERVICES
TENANT ACCESS	EXCELLENT CONNECTIVITY/EASE OF INSTALL FROM RISER TO ALL AREAS VIA FLOORS/CEILINGS

MOBILE NETWORK SERVICES

OPERATOR SERVICES	THREE, VODAFONE, O2, EE - 2G, 3G, 4G SERVICES (THREE - 3G/4G ONLY) VARIED 5G SERVICES AVAILABLE FROM VODAFONE, O2 AND THREE EXTERNALLY
COVERAGE SUMMARY	GOOD/VARIABLE COVERAGE ACROSS ALL OPERATORS FOR 2G, 3G & 4G POTENTIAL DEGRADATION OF SERVICES IN LIFTS VARIED 5G SERVICES (GOOD TO POOR) IN BUILDING FROM VODAFONE, O2 AND THREE
BUILDING SOLUTIONS	NONE

SUMMARY

Fixed Network Services		In-Building Mobile Network Services						
BT Openreach	Excellent	Operator	2G	3G	4G	5G	Voice	Data
Other Carriers	Excellent	Three	✗	✓	✓	✓	Good	Good
Services in Building	Excellent	Vodafone	✓	✓	✓	✓	Good	Good
Risers	Excellent	O2	✓	✓	✓	✓	Good	Good
Building Distribution	Excellent	EE	✓	✓	✓	✗	Good	Good



Fixed Network Connectivity - Carrier Study

Rivergate, Newbury Business Park, London Road, Newbury RG14 2PZ

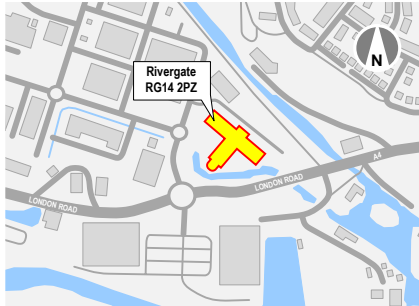
Sep 2021

STRUCTURE

Rivergate is an established commercial property located at the entrance to the Newbury Business Park. The building extends to ground and two upper floors affording a total of approximately 62,041 sq ft (5,766 sqm) of high quality office accommodation with raised access floors and suspended ceilings throughout. The building is of typical frame construction with a mixture of brick and glazed facades to all elevations and sits within an environment with other commercial properties of varying heights with good separation between adjacent buildings.

TOPOGRAPHY

Location Plan

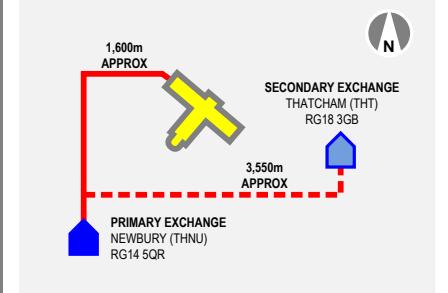


BT Exchange Information

Primary Exchange	NEWBURY (THNU)
(1,600m approx)	RG14 5QR
Secondary Exchange	THATCHAM (THT)
(3,550m approx)	RG18 3GB

BT Exchange Locations

Routes and distances are indicative only



BT SUMMARY

Rivergate is located approximately 1,600m from the BT Newbury Exchange, which is situated to the south west of the building. Newbury Exchange provides excellent services including ADSL, ADSL+, SDSL, 21CN WBC, FTTC and FTTP (to some areas) plus the availability of LLU services from Sky, Talk Talk, Vodafone and Zen Internet all over BT infrastructure. Based on the existing standard copper services, this exchange can offer ADSL broadband speeds of around 5-11Mbps at this time. This exchange has been enabled to provide BT FTTC services, but these do not extend to the building location or provide any timescales for deployment at this time (Data obtained via the BT website). Thatcham Exchange to the east affords a lesser level of services but could provide a level of diversity and resilience across BT business services should it be required.

TELECOMS CARRIERS

Telecommunications carriers with owned infrastructure located adjacent to the building are listed below for information. In addition to these, there are a number of alternative carriers that can provide service, albeit over a third party network such as BT. It must be noted that the presence of infrastructure within the search area does not constitute availability of service.

British Telecom Tel: 0800 800 152 www.bt.com

Vodafone Tel: 020 7111 0047 www.vodafone.co.uk

Virgin Media Tel: 0800 953 0180 www.virginmedia.com

SUMMARY

The BT copper and fibre services available at Newbury Exchange, and added resilience of a second exchange afford Rivergate an excellent level of services to meet today's business needs with the added advantage of potentially good diversity and resilience opportunities. The physical presence of alternative carriers infrastructure to BT from Vodafone in the building, with Virgin Media in the local environs affords an excellent choice of alternative carrier to provide fibre services to any incoming tenant at this time albeit subject to network extension and new building entry requirements for Virgin Media.

RATING

BT	4
OTHERS	4

BT

- 1 Low (Copper only)
- 2 Fair (Copper internal / fibre in environs)
- 3 Good (Copper internally / fibre externally)
- 4 Excellent (Copper/fibre internally) with diversity

OTHERS

- 1 None (No alternative carriers adjacent to site)
- 2 Fair (Carrier services in local environs)
- 3 Good (Carrier services adjacent to building/site)
- 4 Excellent (Carrier services in building/site)

GLOSSARY OF TERMS

ADSL (Asymmetric Digital Subscriber Line) Asymmetric line speed, the speed from the internet to the user, and the user to the internet are different. Feed over copper cable, governed by distance from exchange to user. (co-exists with voice services)

ADSL+ (Asymmetric Digital Subscriber Line+) Asymmetric line speed as above, but with faster connections both downstream and upstream over similar distance following roll-out of BT's 21CN Wholesale Broadband Connect (WBC).

SDSL (Symmetric Digital Subscriber Line) Symmetric line speed, the speed between the user and the internet are the same in both directions but cannot co-exist with voice services over the same line.

FTTC (Fibre to the Cabinet) Provides fibre to the cabinet, shortening copper cable length requirements to enhance speed

FTTP (Fibre to the Premises) Provides fibre direct to the premises at a lower cost than that of standard lease line products

LLU (Local Loop Unbundling) Is the process by which third party network operators are able to install equipment into BT exchanges in order to deliver their own services without having to utilise BT's network.

BT Fibre Essential, Fibre 1, 2, 100, 300 and 900 (British Telecom) Fibre to the cabinet/premises delivered services from enabled exchanges providing broadband speeds of up to 900Mbps download (subject to conditions) at a lower cost to that of traditional leased fibre services.

Mobile Voice / Data Appraisal - Coverage Predictions

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TOPOGRAPHY



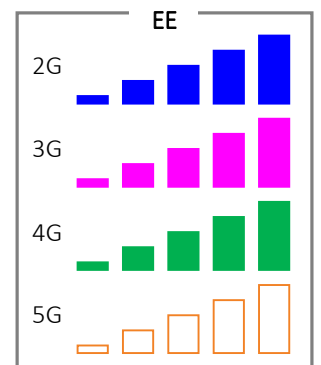
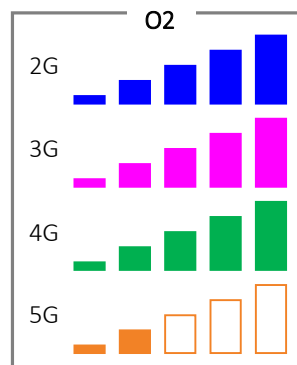
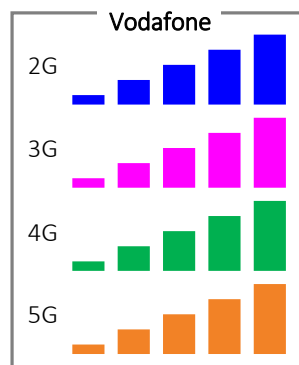
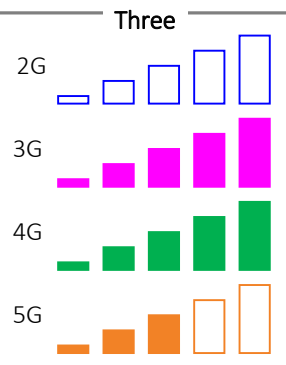
Building Observations

- Building sits in an open environment with good separation
- Adjacent buildings of varying height
- Building fabric consists of brick and glazed facades
- No noted mobile equipment located on roof top
- No noted in-building coverage solutions in place

Building Environment



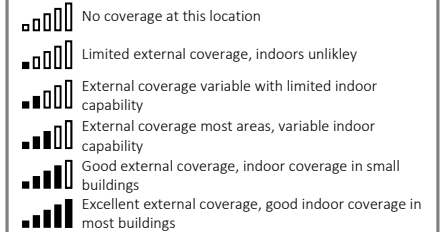
STREET LEVEL COVERAGE



OBSERVATIONS

Following our review of the mobile operators coverage details it is clear that Rivergate affords an excellent level of macro coverage from all operators for 2G, 3G and 4G services. The availability of 5G services across all operators is in early stages of roll-out across the country and currently provides varied external coverage from Vodafone, O2 and Three. Based on this information it is considered to be a location that affords an excellent level of overall coverage across all operators at street level for 2G, 3G and 4G services at this time, with varied 5G services. Any high concentration of users within the building may impact on the capacity available especially if this is confined to any one single network operator.

COVERAGE KEY - Street Level



PREDICTIONS

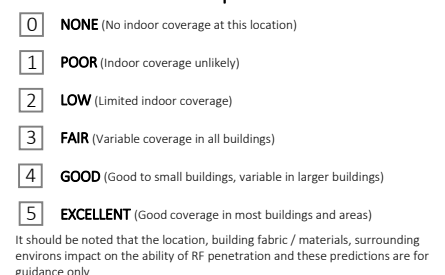
Surrounding buildings, the distance and direction of the serving cells and building construction can all impact on the penetration of signal throughout a building. Based on the location and serving cells, it is envisaged that a good/variable level of coverage will be present throughout the building for 2G, 3G and 4G services with some potential degradation in the lifts across all operators and technologies. In-building coverage across 5G services is considered to vary from good to poor from Vodafone, O2 and Three. In cases of coverage issues, each of the operators can provide solutions to enhance their service of which we can provide details and assist in their procurement and installation should they be required. This extends to full in-building coverage, or specific areas or floors by means of Small Cell technology. Further to the coverage levels, the availability of service is dependant on capacity. This is the volume of data and simultaneous voice calls the macro cell can accommodate at any one time. Capacity issues result in 'network busy' messages or dropped calls. The level of capacity can be addressed by the operators should the building be populated with a high number of users on a single network which will impact on both them and others using the same cell.

INDOOR SUMMARY

OPERATOR	2G	3G	4G	5G
Three	0	4	4	2
Vodafone	4	4	4	4
O2	4	4	4	1
EE	4	4	4	0

Three operates a 3G/4G/5G network only ■ 5G Services are currently in roll-out across the UK in selected cities

COVERAGE KEY - Indoor prediction



Fixed Telecoms Appraisal Summary

In addition to the Fixed Network carrier study completed, a review by survey of the building was undertaken on the 1st September 2021. The purpose of this survey was to clearly identify the presence of all fixed telecommunications carrier's infrastructure in the building, adjacent to or within the local environs.



SITE AERIAL VIEW (Building highlighted in red)



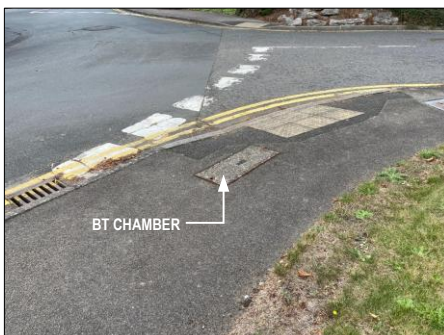
VIEW LOOKING EAST ALONG LONDON ROAD



VIEW LOOKING WEST ALONG LONDON ROAD

Local Carriers

Rivergate has existing telecommunications access from London Road via the access road into the north elevation of the building. The survey located a good level of telecommunications chambers and infrastructure owned and operated by BT, Vodafone and Virgin Media (See **Photographs 1 to 6**). The presence from BT is extensive around the business park with noted cabinets and chambers in the footways on both sides of the carriageway in all areas. The Vodafone infrastructure follows a similar path to that of BT, with noted chambers on both sides of the access road from London Road to the west of the building. The Virgin Media infrastructure is present along London Road with a noted chamber and cabinet cluster opposite the park entrance on the south side of the carriageway. Additional infrastructure was located in the footway on the north side of London Road to the east of the building. No presence was identified across the park, but based the location of the closest chamber we consider extension to the building is viable, albeit subject to consideration by the carrier based on our initial inspection.



PHOTOGRAPH 1
EXISTING BT CHAMBER IN FOOTWAY ON EAST SIDE
OF ACCESS ROAD AT ENTRANCE TO BUILDING



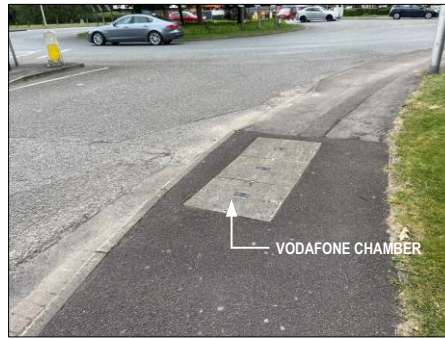
PHOTOGRAPH 2
EXISTING BT CABINET AND CHAMBER PLUS VODAFONE
CHAMBER TO WEST OF BUILDING



PHOTOGRAPH 3
EXISTING BT CHAMBER IN FOOTWAY ON EAST SIDE
OF ACCESS ROAD AT ENTRANCE TO BUILDING CAR PARK



PHOTOGRAPH 4
EXISTING VODAFONE CHAMBER IN FOOTWAY ON
EAST SIDE OF ACCESS ROAD TO SOUTH OF BUILDING



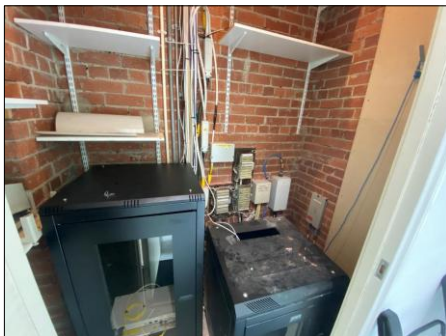
PHOTOGRAPH 5
EXISTING VODAFONE CHAMBER IN FOOTWAY ON
WEST SIDE OF ACCESS ROAD TO SOUTH OF BUILDING



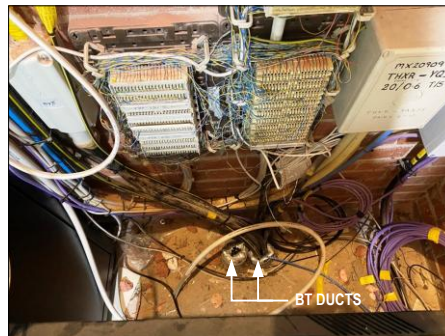
PHOTOGRAPH 6
EXISTING VIRGIN MEDIA CHAMBER IN FOOTWAY ON
NORTH SIDE OF LONDON ROAD TO EAST OF BUILDING

Building Presence

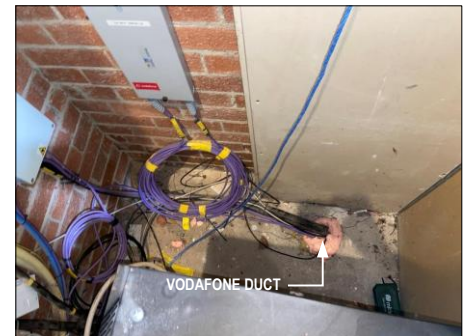
All telecommunications services enter the building from the north elevation into the ground floor riser cupboard (See **Photographs 7 to 12**). 2No. 90mm diameter (approx) ducts enter the building affording access for BT's copper and fibre services. The copper services are delivered over multiple cables terminated in a main distribution point (DP) on the wall plus additional DP's, all with outgoing services to the main riser. Based on the incoming cables and DP's, we consider approximately 200 copper pairs are present, albeit subject to confirmation from BT. The BT fibre services are delivered over multiple cables (multiple tubes/fibres) terminated in a splice enclosure and gas seals on the wall adjacent to the copper DP's. Outgoing blown fibre tubes are present exiting the cupboard to the riser. Based on the cable sizes we consider that a total of approximately 18No. blown fibre tubes with a capacity of 4/12No. fibres per tube (72/216No. fibres total) are present at this time, albeit subject to confirmation from BT. A further incoming 90mm diameter (approx) duct is present in the riser affording access for Vodafone's fibre services. These services are delivered over multiple cable (multiple fibres) terminated in 2No. building flexibility points (BFP's) adjacent to the duct with outgoing services to the riser. All outgoing services exit the riser cupboard and run horizontally within the ceiling void to the main vertical riser towards the centre of the building. It was noted that the Landlord is currently planning the provision of a managed fibre service to the building as part of the ongoing refurbishment. Further details are included in the Landlords Managed Service section of this report.



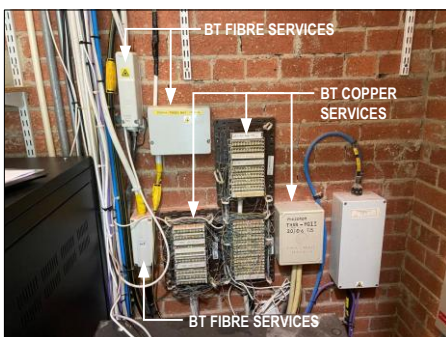
PHOTOGRAPH 7
TYPICAL VIEW OF GROUND FLOOR RISER CUPBOARD
TO NORTH ELEVATION OF BUILDING



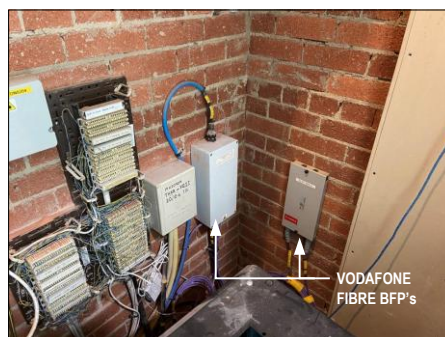
PHOTOGRAPH 8
DETAILED VIEW OF INCOMING BT DUCTS IN FLOOR
TO GROUND FLOOR RISER CUPBOARD



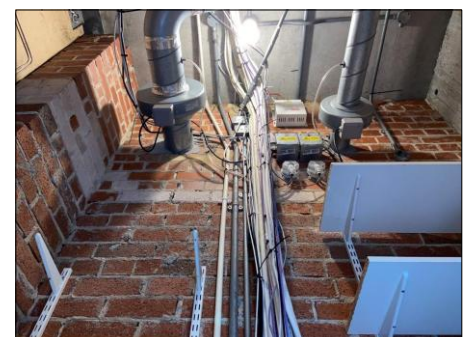
PHOTOGRAPH 9
DETAILED VIEW OF INCOMING VODAFONE DUCT
IN FLOOR TO GROUND FLOOR RISER CUPBOARD



PHOTOGRAPH 10
DETAILED VIEW OF BT COPPER AND FIBRE SERVICES
IN GROUND FLOOR RISER CUPBOARD



PHOTOGRAPH 11
DETAILED VIEW OF EXISTING VODAFONE FIBRE BFP'S
IN GROUND FLOOR RISER CUPBOARD



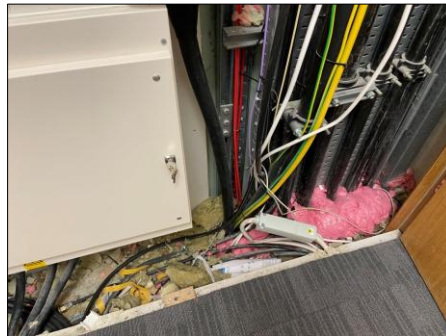
PHOTOGRAPH 12
TYPICAL VIEW OF EXISTING SERVICES EXITING RISER
CUPBOARD INTO CEILING VOID AT HIGH LEVEL

Risers and Cable Routes

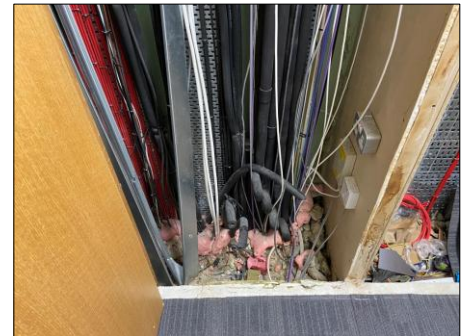
Access from the telecoms intake point extends within the ceiling void into the main building riser towards the centre of the building. We are aware that a level of containment is in place affording access for all services with hatch access points at strategic locations for new service installations. Based on our inspection of the building and riser we conclude that access to all floors is excellent in respect of riser location and available space with excellent access into the tenant areas to suit via the raised floors and suspended ceilings (See **Photographs 13, 14 & 15**).



PHOTOGRAPH 13
TYPICAL VIEW OF RISER CUPBOARD ON FIRST FLOOR
TOWARDS CENTRE OF BUILDING



PHOTOGRAPH 14
TYPICAL VIEW OF RISER CUPBOARD ON FIRST FLOOR
INDICATING EXISTING SERVICES AND AVAILABLE SPACE



PHOTOGRAPH 15
TYPICAL VIEW OF RISER CUPBOARD ON FIRST FLOOR
INDICATING EXISTING SERVICES AND AVAILABLE SPACE

Landlord Managed Services

In addition to the copper and fibre services available direct from the carriers, the Landlord is currently in the process of providing a full managed fibre service which will be available to all tenants both fixed and over WI-FI. This will allow a number of fibre based services to be provided to any incoming tenant within very short timescales of order across all floors with a potential level of backhaul resilience across separate carriers and no requirements for building wayleaves. Typical services available include internet connectivity from 100Mbps to 1Gbps, choice of circuit and contract lengths, links to data centre co-hosting with cross connects to all major data centres, SIP and other voice services etc.

Service Availability

The standard services afforded by BT over its existing copper networks can offer ADSL broadband speeds of around 5-11Mbps at this time. Newbury Exchange has been enabled to provide BT FTTC services, but these do not extend to the building location or provide any timescales for deployment at this time (Data obtained via the BT website). In addition to the copper services, it is clear that an excellent level of fibre based business tariff services will be available from BT to provide any level of speed and bandwidth required over fibre products. For example, the introduction of a 100Mbps fibre bearer can be delivered over the existing ducted network affording un-contended upload and download port speeds from 10Mbps to 100Mbps based on the tenants requirements. These are also scalable from initial requirements up to the maximum available speeds in respect of the bearers. Higher bearer capacities are available to suit typically 500Mbps to 1Gbps and beyond where required. Furthermore, there are a host of companies that can provide enhanced products over the existing infrastructure potentially providing smaller businesses a more affordable level of service if so required. The presence of Vodafone in the building affords an excellent level of alternative service should it be required, delivering a similar range of fibre products to that of BT. Furthermore the presence of the future Landlords managed fibre service across the building will provide both internet access and telephony services. This level of service will permit the connection and provision of services in minimal timescales to all new and existing tenants where required.

Summary

Based on the level of infrastructure and the availability of services from BT's local exchange we consider Rivergate has an excellent level of connectivity with the ability to enhance this by means of fibre services where required in minimal timescales from order in respect of BT, Vodafone and the future Landlords managed services. In addition, the presence of the Virgin Media services in the local environs greatly increases the connectivity of the building, albeit subject to local extension and new building entry requirements.