

Telecommunications Connectivity

Fixed Network and Mobile Coverage Assessment

329 Bracknell

Doncastle Road

Bracknell

RG12 8PE



FIXED NETWORK SERVICES

BUILDING ENTRIES	
DUCT ENTRIES	3No. TOTAL
LOCATION	GROUND FLOOR (MULTI LOCATIONS)
OTHER	VODAFONE ON EXTERNAL WALL
SECURITY	EXCELLENT / GOOD
OWNERSHIP	BT / VIRGIN MEDIA / VODAFONE
DIVERSITY AVAILABLE	YES - BY CARRIER / SEPARATION
CAPACITY	SPARE CAPACITY AVAILABLE

CARRIERS	
BT OPENREACH	IN BUILDING
VODAFONE	IN BUILDING
CITY FIBRE	IN BUILDING
VIRGIN MEDIA	IN BUILDING
LEVEL 3	OUTSIDE BUILDING
VERIZON	LOCAL ENVIRONS

SERVICES	
BT OPENREACH	COPPER + FIBRE SERVICES – GROUND FLOOR TELECOMS ROOM ADSL BROADBAND AT 3-7Mbps
VODAFONE	FIBRE SERVICES – BUILDING FLEXIBILITY POINT
CITY FIBRE	FIBRE SERVICES – BUILDING FLEXIBILITY POINT
VIRGIN MEDIA	COPPER SERVICES ONLY AT THIS TIME

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

BUILDING DISTRIBUTION	
RESILIENCE	SECURE INTAKE LOCATIONS ON GROUND FLOOR
RISERS	SECURE RISERS AVAILABLE – RESTRICTED ACCESS
SECURITY	EXCELLENT SECURITY THROUGHOUT, INTAKE POSITIONS IN RESTRICTED ACCESS AREAS.
RISER SPACE	EXCELLENT SPACE FOR ADDITIONAL SERVICES
TENANT ACCESS	EXCELLENT CONNECTIVITY/EASE OF INSTALL FROM RISER TO ALL AREAS VIA CEILINGS

MOBILE NETWORK SERVICES

OPERATOR SERVICES	THREE, VODAFONE, O2, EE - 2G, 3G, 4G SERVICES (THREE - 3G/4G ONLY) NO 5G SERVICES AVAILABLE AT THIS TIME
COVERAGE SUMMARY	GOOD/VARIABLE COVERAGE ACROSS ALL OPERATORS FOR 2G, 3G & 4G POTENTIAL DEGRADATION OF SERVICES IN LIFTS NO 5G SERVICES IN BUILDING AT THIS TIME
BUILDING SOLUTIONS	NONE

SUMMARY

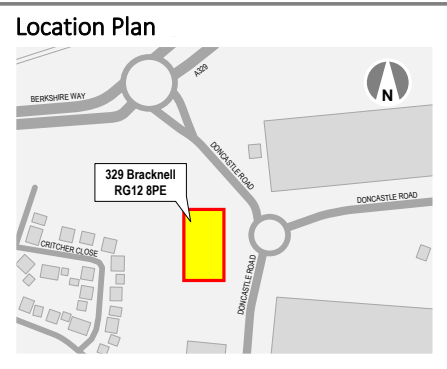
Fixed Network Services		In-Building Mobile Network Services						
BT Openreach	Excellent	Operator	2G	3G	4G	5G	Voice	Data
Other Carriers	Excellent	Three	x	✓	✓	x	Good	Good
Services in Building	Excellent	Vodafone	✓	✓	✓	x	Good	Good
Risers	Excellent	O2	✓	✓	✓	x	Good	Good
Building Distribution	Excellent	EE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



STRUCTURE

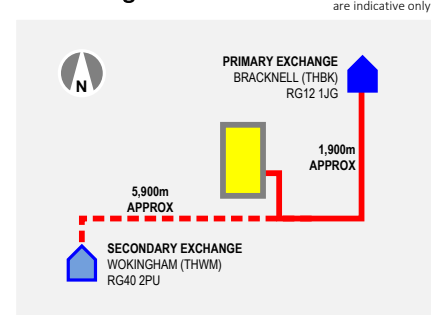
329 Bracknell is an established commercial property located to the south west of Bracknell town centre. The building extends to ground and two upper floors affording approximately 33,600 sq ft (3,123 sqm) of high quality office accommodation over a variety of floor plates with suspended ceilings throughout. The building is of typical frame construction with a mixture of brick, timer and glazed facades to all elevations and sits within a predominantly commercial environment with other properties of varying heights in all directions.

TOPOGRAPHY



BT Exchange Information
Primary Exchange BRACKNELL (THBK)
(1,900m approx) RG12 1JG
Secondary Exchange WOKINGHAM (THWM)
(5,900m approx) RG40 2PU

BT Exchange Locations



BT SUMMARY

329 Bracknell is located approximately 1,900m from the BT Bracknell Exchange, which is situated to the north east of the building. Bracknell 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 and Vodafone all over BT infrastructure. Based on the existing standard copper services, this exchange can offer ADSL broadband speeds of around 3-7Mbps 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). Wokingham Exchange to the south west affords a similar level of services and 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
Virgin Media Tel: 0800 953 0180 www.virginmedia.com
Vodafone Tel: 020 7111 0047 www.vodafone.co.uk
City Fibre Tel: 0845 293 0774 www.cityfibre.com
Level 3 Tel: 020 7954 5454 www.level3.com
Verizon Tel: 0800 018 1818 www.verizonenterprise.com/uk

SUMMARY

The BT copper and fibre services available at Bracknell Exchange, and added resilience of a second exchange afford 329 Bracknell 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 Virgin Media, Vodafone and City Fibre in the building, with Level 3 and Verizon outside the building and 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.

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)

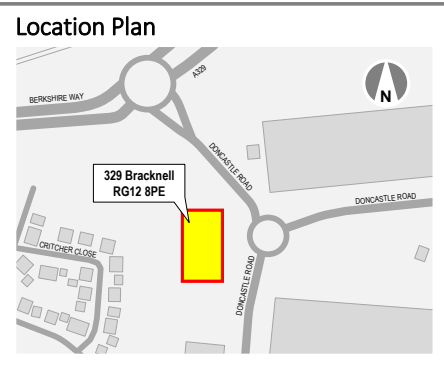
GLOSSARY OF TERMS

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.

STRUCTURE

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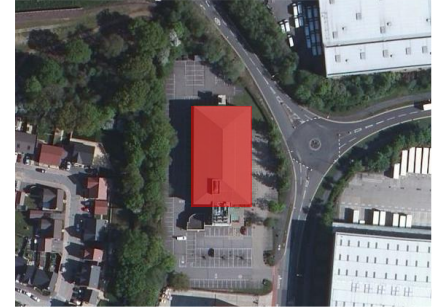
TOPOGRAPHY



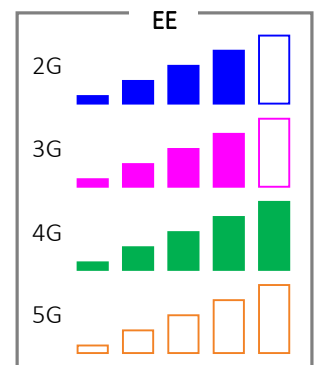
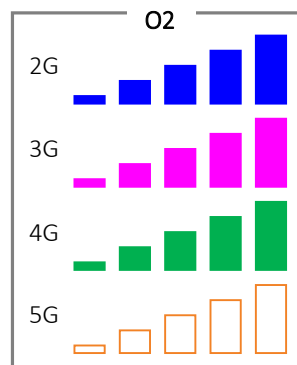
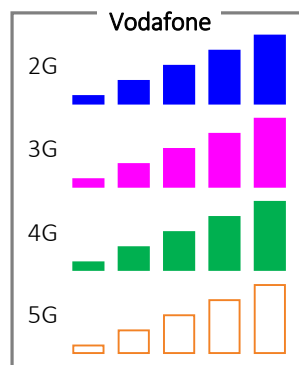
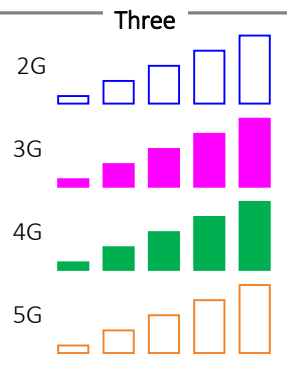
Building Observations

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

Building Environment



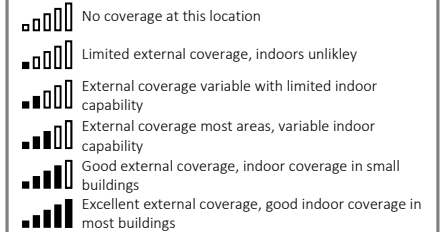
STREET LEVEL COVERAGE



OBSERVATIONS

Following our review of the mobile operators coverage details it is clear that 329 Bracknell 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 no external coverage to the vicinity of the building. 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. 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

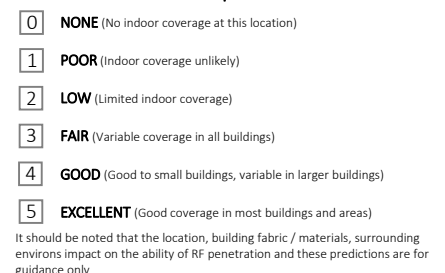
Surrounding buildings, the distance and direction of the serving cells and building construction can all impact on the penetration of signal throughout a building. Based on the location and serving cells, it is envisaged that a good/variable level of coverage will be present throughout the building for 2G, 3G and 4G services with some potential degradation in the lifts across all operators and technologies. In-building coverage across 5G services is not available at this time. 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	0
Vodafone	4	4	4	0
O2	4	4	4	0
EE	3	3	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 4th February 2020 (Not updated as part of Aug 2021 refresh). 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)



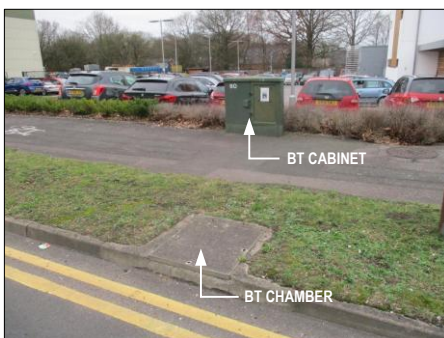
VIEW LOOKING SOUTH ALONG DONCASTLE ROAD



VIEW LOOKING NORTH ALONG DONCASTLE ROAD

Local Carriers

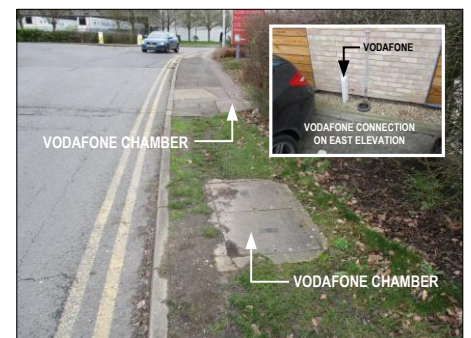
329 Bracknell has existing telecommunications access from the east elevation from Doncastle Road into the ground floor. The survey located an excellent level of telecommunications chambers and infrastructure owned and operated by BT, Virgin Media, Vodafone, City Fibre and Level 3 outside of the building with Verizon in the local environs (See **Photographs 1 to 6**). The presence from BT, Virgin Media, Vodafone, City Fibre and Level 3 is extensive with noted chambers along Doncastle Road indicating continuous network infrastructure running past the building frontage. The infrastructure from Verizon was identified only to the west of the building, and is not considered to be a commercially viable option for extension and connection at this time, albeit subject to confirmation from the carrier. In addition to the BT connection, it is clear existing network from Virgin Media is in place with duct running to the south of the building in the car park to a chamber at the rear of the building. Furthermore, an historic Vodafone connection is in place on the building towards the north end from their adjacent chamber on Doncastle Road into the ground floor.



PHOTOGRAPH 1
EXISTING BT CABINET AND CHAMBER IN FOOTWAY / VERGE
ON DONCASTLE ROAD OUTSIDE BUILDING



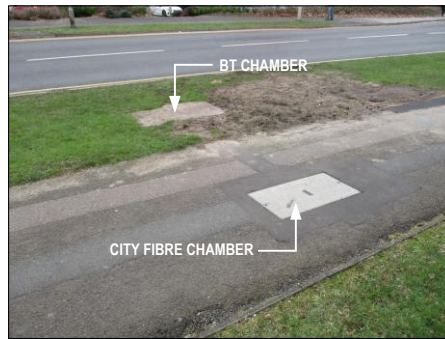
PHOTOGRAPH 2
EXISTING VIRGIN MEDIA CHAMBER IN VERGE
ON DONCASTLE ROAD OUTSIDE BUILDING



PHOTOGRAPH 3
VODAFONE CHAMBERS ON DONCASTLE ROAD OUTSIDE
BUILDING AND HISTORIC CONNECTION ON EAST ELEVATION



PHOTOGRAPH 4
EXISTING LEVEL 3 CHAMBER IN FOOTWAY
ON DONCASTLE ROAD OUTSIDE BUILDING



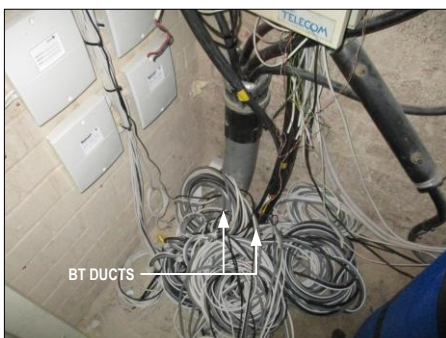
PHOTOGRAPH 5
EXISTING BT AND CITY FIBRE CHAMBERS IN VERGE
ON DONCASTLE ROAD OPPOSITE BUILDING



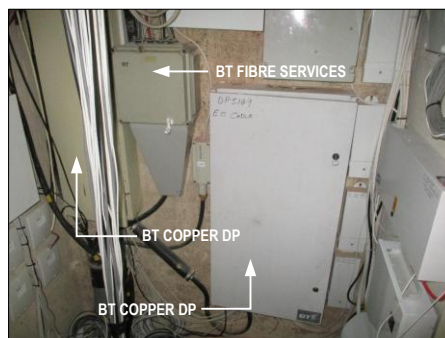
PHOTOGRAPH 6
EXISTING VIRGIN MEDIA CHAMBER IN PAVED AREA
TO REAR OF BUILDING

Building Presence

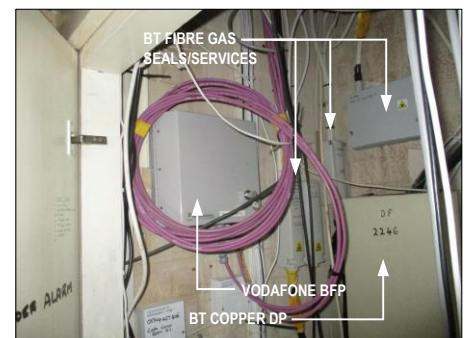
The building has 3No. telecommunication intakes, all located on the ground floor with termination equipment located in the main telecoms room (See **Photographs 7 to 12**). The primary intake from BT is located in main telecoms room where they enter the building via 2No. 90mm diameter (approx) ducts in the floor providing access for their copper and fibre services. The copper services are delivered over multiple cables terminated in two distribution points (DP) DP 2246 and DP5149 (marked EO line only). From this point a number of cables exit to further distribution points both in the room and the risers. Based on the cables and DP's we consider approximately 300 to 400 copper pairs are present, albeit subject to confirmation from BT. The fibre services are delivered over 4No. cables (multiple tubes/fibres) terminated in 3No. gas seals and a splice enclosure. Further splice enclosures and gas seal joints were found within the room and the risers delivered services to the tenants. Based on the cables we consider that a total of approximately 25No. blown fibre tubes with a capacity of 4/12No. fibres per tube (100/300No. fibres total) are present at this time, albeit subject to confirmation from BT. A second intake is present in the room from Virgin Media (albeit historic NTL) which provides access for a single incoming 100 pair copper service. This service is terminated in a DP on the wall with cabling and further DP's identified in the riser on the first and second floor. The third entry is again historic from Vodafone direct into the building at the north end on the east elevation. The cable route is deemed to be at high level in the ceiling and terminated in a building flexibility point (BFP) in the telecoms room adjacent to the BT ducts. Outgoing fibre services are in place with two further BFP's identified in the riser cupboard on the second floor. In addition to the above, an incoming service from City Fibre is present in the telecoms room at high level terminated in a BFP. The incoming cable route could not be identified, but knowing this is a recent installation, we consider it may be provided over the BT duct as a level of recent works was evident in the footway as indicated on **Photograph 5** in the previous section. It was noted that an existing rack is present within the room providing managed fibre services to the tenants with backhaul provided by BT at this time. Further details are included in the Landlords Managed Service section of this report.



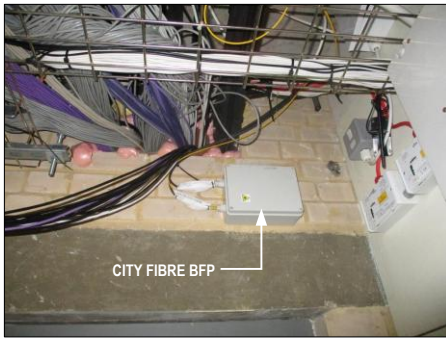
PHOTOGRAPH 7
TYPICAL VIEW OF BT DUCTS AND CABLE ENTRIES
IN TELECOMS ROOM ON GROUND FLOOR



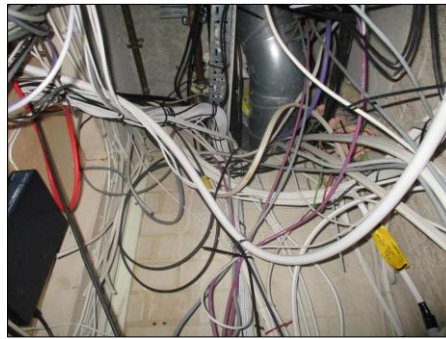
PHOTOGRAPH 8
TYPICAL VIEW OF BT COPPER AND FIBRE SERVICES
ADJACENT TO INTAKE DUCTS



PHOTOGRAPH 9
VIEW OF BT COPPER AND FIBRE SERVICES
PLUS VODAFONE FIBRE BFP



PHOTOGRAPH 10
VIEW OF CITY FIBRE BFP ON WALL ABOVE DOOR
TO GROUND FLOOR TELECOMS ROOM



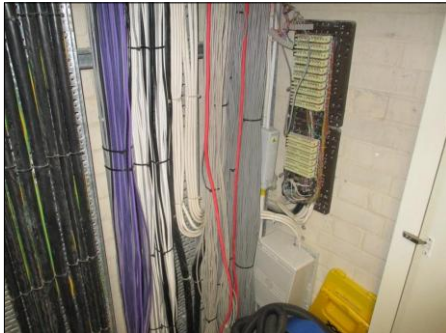
PHOTOGRAPH 11
TYPICAL VIEW OF EXISTING CABLING FROM BT
INTAKE POSITION AT HIGH LEVEL TOWARDS RISER



PHOTOGRAPH 12
TYPICAL VIEW OF OUTGOING TELECOMS SERVICES
TO RISER AT HIGH LEVEL IN TELECOMS ROOM

Risers and Cable Routes

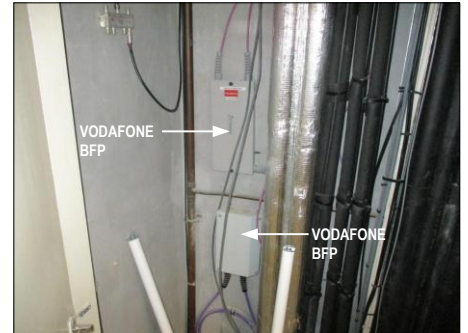
Access from the telecoms intake points within the ground floor telecoms room to the riser is via high level containment. Based on our inspection of the building and risers we conclude that access to all floors is excellent in respect of riser location and available space with excellent access into the tenant areas to suit via the suspended ceilings (See **Photographs 13, 14 & 15**).



PHOTOGRAPH 13
TYPICAL VIEW OF RISER CUPBOARD ON FIRST FLOOR
INDICATING EXISTING SERVICES AND AVAILABLE SPACE



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



PHOTOGRAPH 15
VIEW OF EXISTING VODAFONE FIBRE BFP'S
AND CABLING IN SECOND FLOOR RISER

Landlord Managed Services

In addition to the copper and fibre services available direct from the carriers, the building has a full managed fibre service available to all tenants both fixed and over WI-FI. This allows 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 3-7Mbps at this time. Bracknell 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, City Fibre and Virgin Media* (* Virgin Media copper services only at this time) 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 Landlords managed fibre service is available across the building providing 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 329 Bracknell 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, City Fibre, Landlords managed services and potentially Virgin Media. In addition, the presence of the Level 3 and Verizon services outside of the building and in the local environs greatly increases the connectivity of the building, albeit subject to local extension and new building entry requirements.