

Telecommunications Connectivity

Fixed Network and Mobile Coverage Assessment

Briarcliff Parc
 Kingsmead
 Farnborough
 GU14 7TE



FIXED NETWORK SERVICES

BUILDING ENTRIES	
DUCT ENTRIES	4No. TOTAL (NOT CONFIRMED)
LOCATION	TELECOMS ROOM - GROUND
SECURITY	EXCELLENT
OWNERSHIP	BT
DIVERSITY AVAILABLE	NO
STATUS (CAPACITY)	SPARE CAPACITY ASSUMED

CARRIERS	
BT OPENREACH	IN BUILDING
VIRGIN MEDIA	OUTSIDE BUILDING
VODAFONE	OUTSIDE BUILDING

SERVICES	
BT OPENREACH	COPPER + FIBRE SERVICES – GROUND FLOOR TELECOMS ROOM ADSL BROADBAND AT 10-19Mbps FTTN AT 300Mbps

ADDITIONAL SERVICES	
LANDLORD	LANDLORD WI-FI TO EXTERNAL GARDEN AREA / POTENTIAL MANAGED SERVICE TO OFFICES
OTHERS	N/A

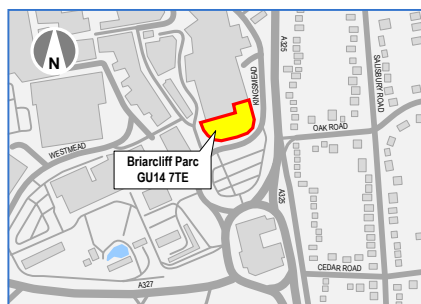
BUILDING DISTRIBUTION	
RESILIENCE	SECURE INTAKE LOCATION IN GROUND FLOOR TELECOMS ROOM
RISERS	SECURE RISER AVAILABLE – RESTRICTED ACCESS
SECURITY	EXCELLENT SECURITY THROUGHOUT, INTAKE POSITION IN RESTRICTED ACCESS AREA
TENANT FLOOR SPACE	EXCELLENT CONNECTIVITY/EASE OF INSTALL FROM RISER VIA RAISED FLOORS

MOBILE NETWORK SERVICES

OPERATOR SERVICES	THREE, VODAFONE, O2, EE - 2G, 3G, 4G (THREE - 3G/4G ONLY)
COVERAGE SUMMARY	GOOD/VARIABLE COVERAGE ACROSS ALL OPERATORS, POTENTIAL DEGRADATION OF SERVICES IN LIFTS (NO 5G SERVICES IN BUILDING)
BUILDING SOLUTIONS	NO COVERAGE SOLUTIONS IN PLACE AT THIS TIME



Briarcliff Parc
Kingsmead, Farnborough
GU14 7TE



Fixed Network Services

BT Services	Excellent
Other Carriers	Good
Building Distribution	Excellent

Mobile Network Services

Operator	Voice	Data
Three	Good	Good
Vodafone	Good	Good
O2	Good	Good
EE	Good	Good

Fixed Network Connectivity - Carrier Study

Briarcliff Parc, Kingsmead, Farnborough GU14 7TE

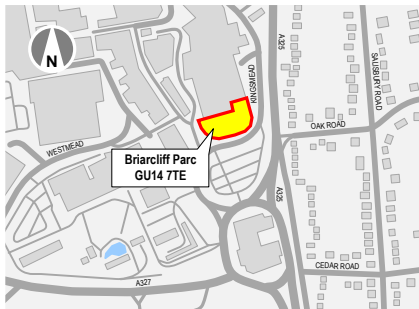
Aug 2020

STRUCTURE

Briarcliff Parc is an established commercial property located on Kingsmead in Farnborough town centre. The building extends to ground floor reception and plant rooms with three upper floors affording approximately 43,000 sq ft (3,996 sqm) of available high quality refurbished office accommodation with raised access floors on the first and second floors. The building is of typical frame construction with a predominantly glazed facade located within an environment of other commercial properties of similar height in all directions with good separation between adjacent buildings.

TOPOGRAPHY

Location Plan

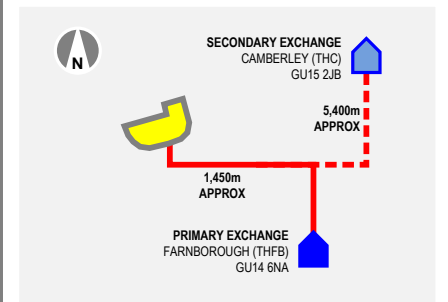


BT Exchange Information

Primary Exchange	FARNBOROUGH (THFB)
(1,450m approx)	GU14 6NA
Secondary Exchange	CAMBERLEY (THC)
(5,400m approx)	GU15 2JB

BT Exchange Locations

Routes and distances are indicative only



BT SUMMARY

Briarcliff Park is located approximately 1,450m from the BT Farnborough Exchange, which is situated to the south east of the building. Farnborough 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 over BT infrastructure. Based on the standard copper services, this exchange can offer ADSL broadband speeds of around 10-19Mbps at this time. This exchange has been enabled to provide BT Infinity services over FTTC and FTTP technology with speeds of up to 300Mbps indicated to the building at this time over FTTP (Data via the BT website). Camberley Exchange to the north east affords a similar range of services, and could provide a level of diversity and resilience across BT business services if 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

SUMMARY

The BT copper and fibre services available at Farnborough Exchange, and added resilience of a second exchange afford Briarcliff Parc 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 and Vodafone outside of the building and in the local environs affords a good choice of alternative carrier to provide fibre services to any incoming tenant at this time, albeit subject to network extension and the provision of new building entries based on our initial inspection.

RATING

BT	4
OTHERS	3

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

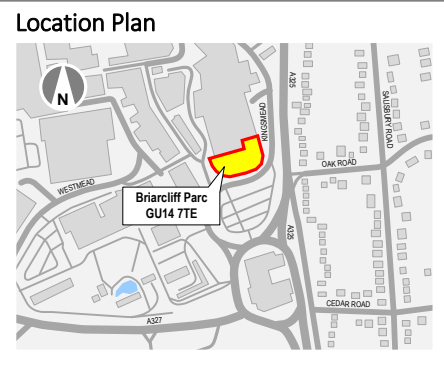
LLU (Local Loop Unbundling) Is the process by which third party network operators are able to install equipment into BT exchanges in order to deliver their own services without having to utilise BT's network.

BT Infinity (British Telecom) Fibre to the cabinet/premises delivered services from enabled exchanges providing broadband speeds of up to 80Mbps download (subject to conditions) at a lower cost to that of traditional leased fibre services.

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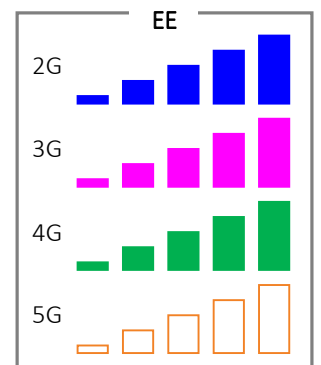
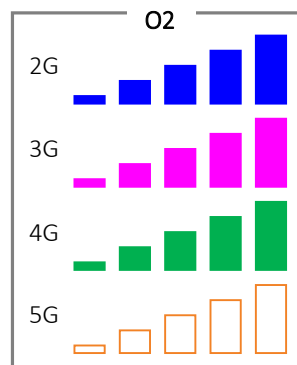
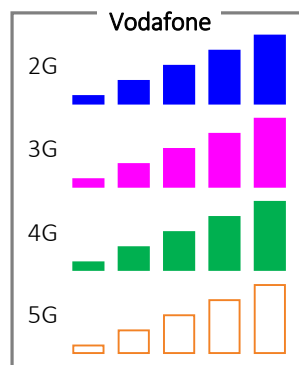
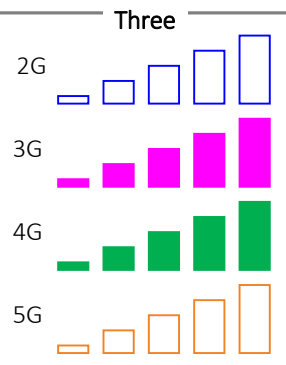


- Building Observations**
- Building sits in a town centre environment
 - Adjacent buildings of varying height in all directions
 - Building fabric consists of predominantly glazed facades
 - No noted mobile equipment located on roof top
 - No noted in-building coverage solutions in place

Building Environment



STREET LEVEL COVERAGE



OBSERVATIONS

Following our review of the mobile operators coverage details it is clear that Briarcliff Parc 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 is not available at this location. 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. 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

- No coverage at this location
- Limited external coverage, indoors unlikely
- External coverage variable with limited indoor capability
- External coverage most areas, variable indoor capability
- Good external coverage, indoor coverage in small buildings
- Excellent external coverage, good indoor coverage in most buildings

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 Femto 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	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

- 0 NONE (No indoor coverage at this location)
- 1 POOR (Indoor coverage unlikely)
- 2 LOW (Limited indoor coverage)
- 3 FAIR (Variable coverage in all buildings)
- 4 GOOD (Good to small buildings, variable in larger buildings)
- 5 EXCELLENT (Good coverage in most buildings and areas)

It should be noted that the location, building fabric / materials, surrounding environs impact on the ability of RF penetration and these predictions are for guidance only

Fixed Telecoms Appraisal Summary

In addition to the Fixed Network carrier study completed, a review by survey of the building was undertaken on the 12th August 2020. 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)



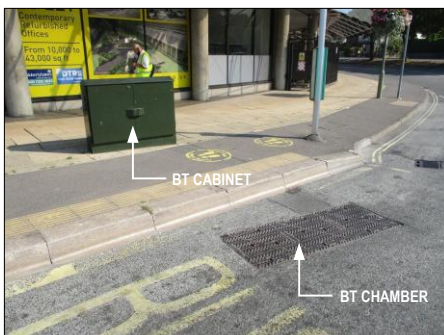
VIEW LOOKING NORTH ALONG KINGSMEAD



VIEW LOOKING WEST ALONG KINGSMEAD

Local Carriers

Briarcliff Parc has telecommunications access from the public highway on Kingsmead into the centre of the building to the rear of the reception area. The survey located a good number of telecommunications chambers owned and operated by the following carriers including BT, Virgin Media and Vodafone running along the length of Kingsmead along the building frontage (See **Photographs 1 to 6**). The presence from BT is extensive in this area with noted chambers and infrastructure along the footway and carriageway on Kingsmead with noted cabinets outside of the building. The level of infrastructure from Virgin Media is again extensive with noted chambers and infrastructure running along a similar path to that of BT with a noted cabinet and associated chambers to the west side of the building on Eastmead. The presence from Vodafone is more confined to the east of the building with noted chambers in Kingsmead, considered to extend along the building frontage.



PHOTOGRAPH 1
 EXISTING BT CABINET AND CHAMBER ON KINGSMEAD
 OUTSIDE BUILDING MAIN ENTRANCE



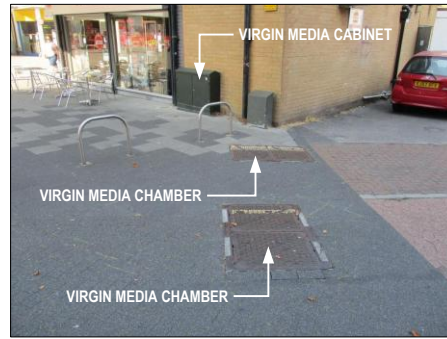
PHOTOGRAPH 2
 EXISTING BT CABINET (FTTC) IN FOOTWAY ON KINGSMEAD
 TO WEST OF BUILDING MAIN ENTRANCE



PHOTOGRAPH 3
 EXISTING VIRGIN MEDIA CHAMBER IN CARRIAGEWAY
 ON KINGSMEAD TO EAST ELEVATION OF BUILDING



PHOTOGRAPH 4
EXISTING VIRGIN MEDIA CHAMBER IN CARRIAGEWAY
AT JUNCTION OF EASTMEAD WITH KINGSMEAD



PHOTOGRAPH 5
EXISTING VIRGIN MEDIA CABINET AND CHAMBERS
ON EASTMEAD TO WEST ELEVATION OF BUILDING



PHOTOGRAPH 6
EXISTING VODAFONE CHAMBER IN CARRIAGEWAY
ON KINGSMEAD TO EAST ELEVATION OF BUILDING

Building Presence

The point of telecommunications entry for the building is located in the ground floor telecoms room towards the centre of the building behind the reception area (See **Photographs 7 to 12**). BT enter this location beneath the floor in the centre of the room covered by a timber access panel. The depth and number of cables limited access and visual ability to note the number of ducts. However, based on the level of cabling etc, we consider a total of 4No. 90mm diameter (approx) ducts will be present (albeit subject confirmation from BT) at this time. BT enter this location affording access for their copper and fibre services to the building. The copper services are delivered over multiple cables terminated in an historic frame within the room (DP2516). Based on the incoming cables, size and frame we consider that approximately 300-400 copper pairs are present, but this will be subject to confirmation from BT. A number of outgoing copper services are present running out of the room, but considering the level of refurbishment and content of the risers, we consider a large number of these are now redundant. The fibre services are delivered over 2No. incoming cables (multiple fibres/tubes) terminated in 2No. gas seals extending to 2No. splice enclosures with outgoing blown fibre tubes, considered to be running to the riser and existing tenant on the third floor. Based on the incoming cable sizes we consider that a total of 8No. blown fibre tubes with a capacity of 4/12No. fibres per tube (32/96No. fibres total) are present at this time, albeit subject to confirmation from BT. No other services from the highlighted carriers were found to be present within the building at the time of the inspection.



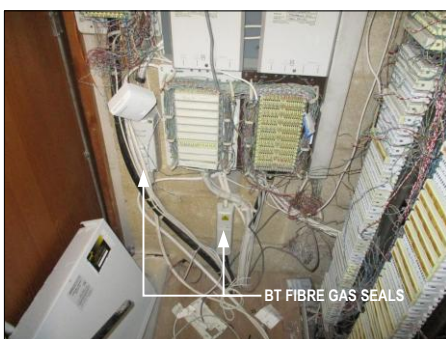
PHOTOGRAPH 7
TYPICAL VIEW OF INCOMING CABLE ENTRY POINT
IN FLOOR IN CENTRE OF TELECOMS ROOM



PHOTOGRAPH 8
VIEW OF BT INTAKE POSITION BENEATH FLOOR
IN TELECOMS ROOM ON GROUND FLOOR



PHOTOGRAPH 9
VIEW OF EXISTING BT COPPER FRAME (DP2516)
ON WALL IN TELECOMS ROOM



PHOTOGRAPH 10
TYPICAL VIEW OF BT FIBRE GAS SEALS ON WALL
IN GROUND FLOOR TELECOMS ROOM



PHOTOGRAPH 11
TYPICAL VIEW OF BT FIBRE SPLICE ENCLOSURES
ON WALL IN GROUND FLOOR TELECOMS ROOM



PHOTOGRAPH 12
TYPICAL VIEW OF EXISTING CABLING AT DOOR
TO TELECOMS ROOM EXITING TO VERTICAL RISER

Risers and Cable Routes

Access from the telecoms intake points in ground floor telecoms room to the tenants floors is afforded by the vertical riser to all floors. Based on our inspection of the building and risers we conclude that access to all floors is excellent in respect of riser location, with excellent access into the tenant areas to suit via the suspended ceilings. There is a noted level of congestion in the riser entry point on the ground floor, but this is not considered to impact on the delivery of any new services at this time (See **Photographs 13, 14 & 15**).



PHOTOGRAPH 13
TYPICAL VIEW OF RISER CUPBOARD ON FIRST FLOOR
(ALL UPPER FLOORS SIMILAR)



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



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

Service Availability

The standard services afforded by BT over its existing copper networks can offer ADSL broadband speeds of around 10-19Mbps at this time. Farnborough Exchange has been enabled to provide BT Infinity services over FTTC and FTTP technology with speeds of up to 300Mbps indicated to the building at this time over FTTP (Data 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 Virgin Media and Vodafone outside and in the local environs provides a good alternative service should it be required, delivering a similar range of fibre products to that of BT.

In addition to the carrier services, the Landlord currently provides external internet connectivity over WI-FI to the external garden area. This coupled with the presence of fibre cabling terminated in each floor riser, the provision of a managed fibre service may be available to all tenants, albeit subject to further investigation.

Summary

Based on the level of infrastructure and the availability of services from BT's local exchange, we consider Briarcliff Parc has an excellent/good 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, plus the potential Landlord managed fibre service. The delivery of services from each of the other highlighted carriers is considered to be viable with varying requirements for network extension plus the requirements for new building entries, and greatly enhances the connectivity of the building at this time.