

Telecommunications Connectivity

Fixed Network and Mobile Coverage Assessment

Unit 50
Drayton Manor Business Park
Coleshill Road
Tamworth
B78 3TL



FIXED NETWORK SERVICES

BUILDING ENTRIES	
DUCT ENTRIES	2No. TOTAL
LOCATION	WAREHOUSE KITCHEN AREA
SECURITY	GOOD
OWNERSHIP	BT
DIVERSITY AVAILABLE	NO
STATUS (CAPACITY)	SPARE CAPACITY AVAILABLE

CARRIERS	
BT OPENREACH	IN BUILDING
VIRGIN MEDIA	LOCAL ENVIRONS

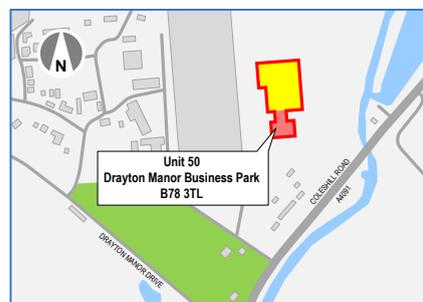
SERVICES	
BT OPENREACH	COPPER + FIBRE SERVICES – GROUND FLOOR WAREHOUSE AREA ADSL BROADBAND AT 4-8Mbps - FTTC AT 11-17Mbps

ADDITIONAL SERVICES	
LANDLORD	N/A
OTHERS	N/A

BUILDING DISTRIBUTION	
RESILIENCE	SECURE INTAKE LOCATION ON GROUND FLOOR
RISERS	SECURE RISERS AVAILABLE – RESTRICTED ACCESS
SECURITY	GOOD SECURITY THROUGHOUT, INTAKE POSITION IN ADJACENT WAREHOUSE AREAS
TENANT FLOOR SPACE	GOOD CONNECTIVITY/EASE OF INSTALL FROM INTAKE VIA RAISED FLOORS/CEILINGS

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 EE SERVICES ACROSS ALL TECHNOLOGIES
BUILDING SOLUTIONS	NO COVERAGE SOLUTIONS IN PLACE AT THIS TIME



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Fixed Network Services

BT Services	Excellent
Other Carriers	Fair
Building Distribution	Good

Mobile Network Services

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

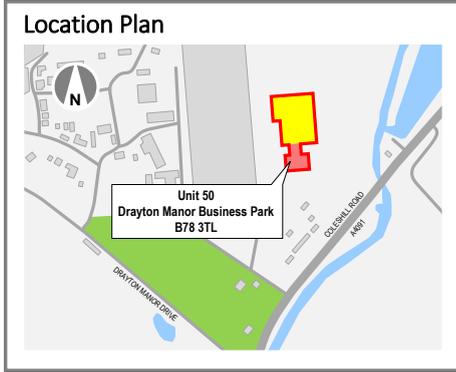
Fixed Network Connectivity - Carrier Study

Unit 50, Drayton Manor Business Park, Coleshill Road, Tamworth B78 3TL

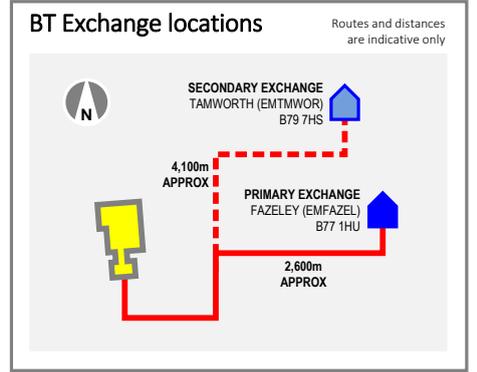
STRUCTURE

Unit 50 is an established commercial office property located on the Drayton Manor Business Park to the south of Tamworth. The building extends to ground and upper floors affording approximately 11,279 sq ft (1,048 sqm) of recently refurbished high quality available office accommodation over open floor plates with raised access floors and suspended ceilings on the first floor. The building is of typical frame construction with a mixture of brick, clad and glazed facades and sits within an environment with other properties of varying height across the park.

TOPOGRAPHY



BT Exchange Information	
Primary Exchange (2,600m approx)	FAZELEY (EMFAZEL) B77 1HU
Secondary Exchange (4,100m approx)	TAMWORTH (EMTMWOR) B79 7HS



BT SUMMARY

Unit 50 is located approximately 2,600m from the BT Fazeley Exchange, which is situated to the north east of the building. This exchange provides excellent services including ADSL, ADSL+, SDSL, 21CN WBC and FTTC (to some areas) plus the availability of LLU services from Sky, Talk Talk and Vodafone over BT infrastructure. Based on the standard copper services, this exchange can only offer ADSL broadband speeds of around 4-8Mbps at this time due to distance constraints. Fazeley Exchange has been enabled to provide BT Infinity services over FTTC technology and is currently indicating availability to the building location with speeds of up to 11-17Mbps (Data via the BT website). Tamworth 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

SUMMARY

The BT copper and fibre services available at Fazeley Exchange, and added resilience of a second exchange afford Unit 50 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 in the local environs affords a fair 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 based on out initial inspection.

RATING		BT		OTHERS	
BT	4	1	Low (Copper only)	1	None (No alternative carriers adjacent to site)
OTHERS	2	2	Fair (Copper internal / fibre in environs)	2	Fair (Carrier services in local environs)
		3	Good (Copper internally / fibre externally)	3	Good (Carrier services adjacent to building/site)
		4	Excellent (Copper/fibre internally) with diversity	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

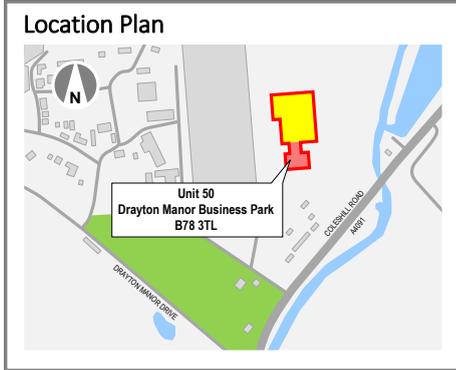
LLU (Local Loop Unbundling) Is the process by which third party network operators are able to install equipment into BT exchanges in order to deliver their own services without having to utilise BT's network.

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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TOPOGRAPHY

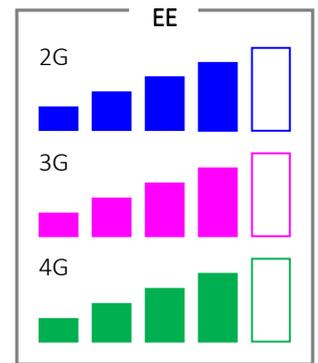
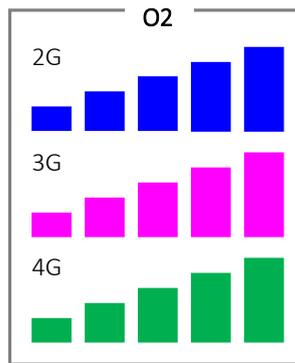
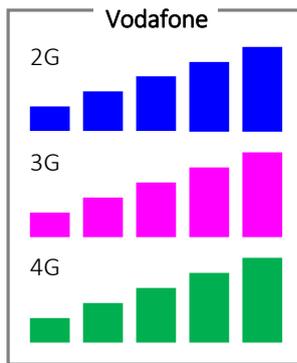
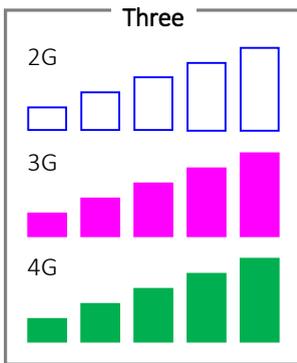


- Building Observations**
- Building sits in a commercial business park environment
 - Adjacent buildings of varying height across park
 - Building fabric consists of brick, clad and glazed facades
 - No noted mobile equipment located on roof top
 - No noted in-building coverage solutions in place

Building Environment



STREET LEVEL COVERAGE



OBSERVATIONS

Following our review of the mobile operators coverage details it is clear that Unit 50 affords an excellent level of macro coverage from all operators for 2G, 3G and 4G services with some noted degradation of services across EE's technologies. 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. Based on this information it is considered to be a location that affords an excellent/good level of overall coverage across all operators at street level for 2G, 3G and 4G services.

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 of EE's services across their 2G, 3G and 4G technologies. 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
Three	0	4	4
Vodafone	4	4	4
O2	4	4	4
EE	3	3	3

EE operates under both T-Mobile and Orange brands within the United Kingdom / Three operates a 3G/4G network only

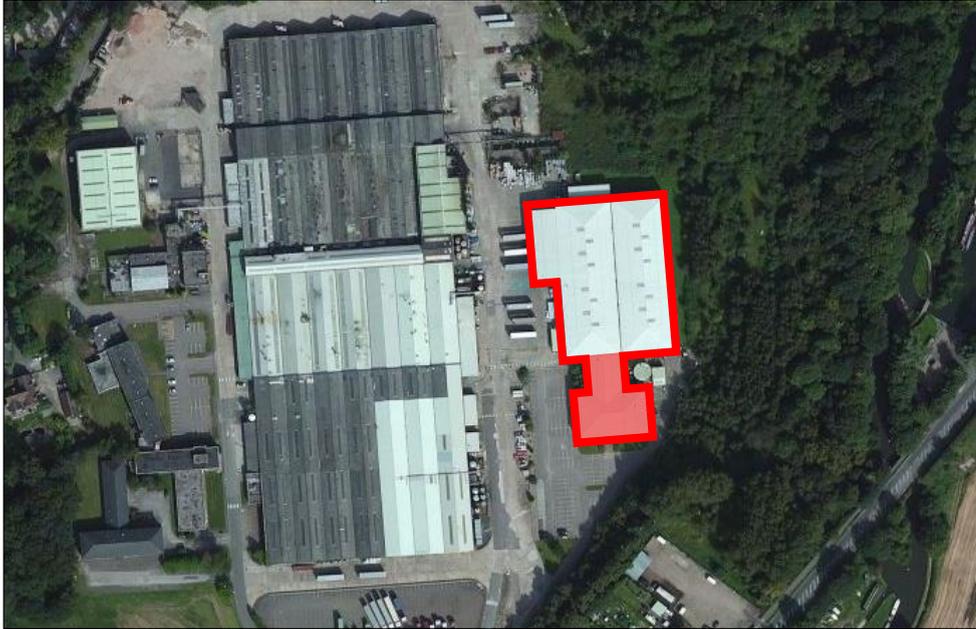
COVERAGE KEY - Indoor prediction

- 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 30th July 2019. 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)



LOOKING NORTH EAST ALONG COLESHILL ROAD



LOOKING SOUTH WEST ALONG COLESHILL ROAD

Local Carriers

Unit 50 has existing telecommunications access from Coleshill Road via the park entrance road into the north elevation of the building via the adjacent warehouse. The survey located a number of telecommunications chambers and infrastructure owned and operated by BT running along Coleshill Road plus a chamber cluster at the entrance to the park and onwards across the park (See **Photographs 1 to 6**). Serving chambers and cabinets associated with the copper services are located to the north in Fazeley. In addition to BT, existing infrastructure is present from Virgin Media in Fazeley extending south along Coleshill Road towards the park. Based on our inspection, this does not currently extend to the park entrance, terminating at the end of the residential properties. The extension of this service is considered possible along Coleshill Road and onto the park, but would be subject to carrier consideration in respect of commercial viability at this time.



PHOTOGRAPH 1
 EXISTING BT CHAMBER IN FOOTWAY AT ENTRANCE FROM COLESHILL ROAD



PHOTOGRAPH 2
 EXISTING BT CHAMBER IN VERGE ADJACENT TO ENTRANCE FROM COLESHILL ROAD



PHOTOGRAPH 3
 EXISTING BT CHAMBER IN FOOTWAY ON WEST SIDE OF COLESHILL ROAD TO NORTH OF PARK ENTRANCE



PHOTOGRAPH 4
 EXISTING BT CHAMBER IN LANDSCAPED AREA TO SOUTH OF BUILDING (SERVING CHAMBER)



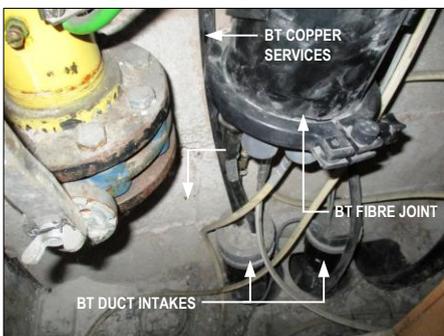
PHOTOGRAPH 5
 EXISTING BT CHAMBER IN CAR PARKING AREA TO SOUTH OF BUILDING



PHOTOGRAPH 6
 EXISTING BT CHAMBER IN VERGE TO SOUTH SIDE OF ACCESS ROAD ADJACENT TO SECURITY OFFICE

Building Presence

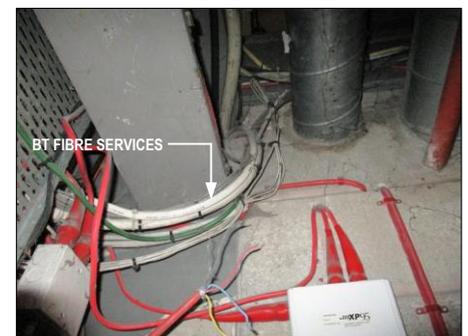
The point of telecommunication services for BT is located behind a small removable panel in the kitchen area of the adjacent warehouse building (See **Photograph 7**). BT enter this location via 2No. 90mm diameter (approx) ducts providing access for their copper and fibre services. The copper services are delivered over a single cable running up the wall within the wall space and along the ceiling void of the kitchen. On investigation, the termination point of the external to internal cabling and distribution point (DP) could not be located. On speaking with the property manager, this was also investigated prior by a BT Engineer who could also not locate the termination point and will be subject to further investigation by them. However, it is clear that internal copper services are available as evidence of such cables were found on the wall in the adjacent warehouse. Based on the size of the incoming cable, we consider a total of 100 copper pairs are present, albeit subject to confirmation by BT. The fibre services are delivered over a single incoming cable (multiple fibres/tubes) terminated in a joint with outgoing blown fibre tubes to the warehouse and ground floor office areas. Based on the incoming cable size a total of 4No. blown fibre tubes with a capacity of 4/12No. fibres per tube (16/48No. fibres total) are present at this time. All outgoing services to the warehouse and ground floor office areas run via the warehouse area at high level into the ceiling voids etc (See **Photographs 8 & 9**).



PHOTOGRAPH 7
 EXISTING BT DUCT INTAKES INDICATING COPPER AND FIBRE SERVICES ON GROUND FLOOR IN WAREHOUSE AREA



PHOTOGRAPH 8
 TYPICAL VIEW OF BT COPPER SERVICES AT HIGH LEVEL ON WAREHOUSE WALL



PHOTOGRAPH 9
 TYPICAL VIEW OF BT FIBRE SERVICES FROM KITCHEN AREA TO WAREHOUSE AREA AT HIGH LEVEL

Risers and Cable Routes

The routing of the existing BT copper and fibre services from the point of intake to the existing warehouse and ground floor office area is via the ceiling void in the kitchen area and the warehouse wall. In respect of the vacant area on the first floor, it is considered a similar route will be followed to provide service to a dedicated area for tenants telecommunications equipment. On this premise, we consider the access is good in respect of available routes, but further investigation by BT is required to locate and document the copper termination distribution point (DP) at this time to service any future tenant telephone lines or ADSL/FTTC service requirements.

Service Availability

The standard services afforded by BT over its existing copper networks can only offer ADSL broadband speeds of around 4-8Mbps at this time due to distance constraints. Fazeley Exchange has been enabled to provide BT Infinity services over FTTC technology and is currently indicating availability to the building location with speeds of up to 11-17Mbps (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 in the local environs affords a fair level of alternative service should it be required, delivering a similar range of fibre products to that of BT.

Summary

Based on the level of infrastructure and the availability of services from BT's local exchange, we consider Unit 50 has an excellent/fair 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. The delivery of services from Virgin Media will be subject to commercial viability of them extending their network infrastructure considering their existing location in respect of the building at this time.