

Telecommunications Connectivity

Fixed Network and Mobile Coverage Assessment

18 Centre Court
 Treforest Industrial Estate
 Pontypridd
 CF37 5YR



FIXED NETWORK SERVICES

BUILDING ENTRIES		CARRIERS	
DUCT ENTRIES	1No. TOTAL	BT OPENREACH	IN BUILDING
LOCATION	REAR SERVICES CUPBOARD	VIRGIN MEDIA	OUTSIDE BUILDING
OTHER	N/A		
SECURITY	EXCELLENT		
OWNERSHIP	BT		
DIVERSITY AVAILABLE	YES BY CARRIER / LOCATION		
CAPACITY	SPARE CAPACITY ENVISAGED		

SERVICES	
BT OPENREACH	COPPER SERVICES – GROUND FLOOR EXTERNAL SERVICES CUPBOARD ADSL AT 8-24Mbps, BT FIBRE ESSENTIAL, FIBRE 1 AND FIBRE 2 AT 35-73Mbps FIBRE LEASED LINE 100Mbps – 10Gbps* (AVAILABLE EXTERNALLY IF REQUIRED)
	* SUBJECT TO CARRIER CONFIRMATION

ADDITIONAL SERVICES	
LANDLORD	N/A
OTHERS	N/A

BUILDING DISTRIBUTION	
RESILIENCE	SECURE INTAKE LOCATION IN GROUND FLOOR EXTERNAL SERVICES CUPBOARD
RISERS	SECURE RISERS AVAILABLE – SEALED PANELS
SECURITY	EXCELLENT SECURITY THROUGHOUT, INTAKE POSITIONS IN RESTRICTED ACCESS AREAS
RISER SPACE	NO ACCESS AVAILABLE AT SURVEY
TENANT ACCESS	GOOD CONNECTIVITY/EASE OF INSTALL FROM INTAKE LOCATION VIA CEILINGS/TRUNKING

MOBILE NETWORK SERVICES

OPERATOR SERVICES	THREE, VODAFONE, O2, EE - 2G, 3G, 4G SERVICES (THREE - 3G/4G ONLY) LOW LEVEL OF 5G SERVICES FROM THREE AND EE ONLY EXTERNALLY
COVERAGE SUMMARY	EXCELLENT/GOOD COVERAGE ACROSS ALL OPERATORS FOR 2G, 3G & 4G NO USABLE 5G SERVICES INTERNALLY FROM ANY OPERATOR ENVISAGED
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	Fair	Vodafone	✓	✓	✓	✗	Good	Good
Risers	Good	O2	✓	✓	✓	✗	Good	Good
Building Distribution	Good	EE	✓	✓	✓	✓	Good	Good



Fixed Network Connectivity - Carrier Study

18 Centre Court, Treforest Industrial Estate, Pontypridd CF37 5YR

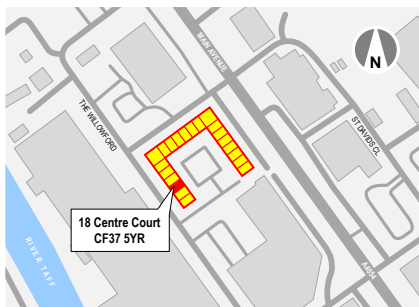
Sep 2022

STRUCTURE

Centre Court is an established office building complex (20No. units) located on the Treforest Industrial Estate in Pontypridd. 18 Centre Court extends to ground and two upper floors affording a total of approximately 1,426 sqft (133 sqm) of office accommodation with suspended ceilings throughout. 18 Centre Court is of typical construction with a mixture of brick and glazed facades to all elevations, and sits alongside other commercial buildings in a terraced environment with other commercial premises of varying height in all directions across the estate with good separation between adjacent properties.

TOPOGRAPHY

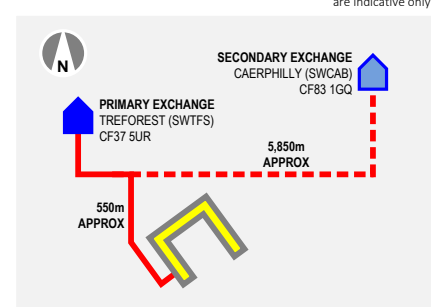
Location Plan



BT Exchange Information

Primary Exchange TREForest (SWTFS)
(550m approx) CF37 5UR
Secondary Exchange CAERPHILLY (SWCAB)
(5,850m approx) CF83 1GQ

BT Exchange Locations



BT SUMMARY

18 Centre Court is located approximately 550m from the BT Treforest Exchange which is situated to the north west of the building. Treforest Exchange provides excellent services including ADSL, ADSL+, SDSL, FTTC and FTTP (to some areas) at this time. Based on the existing standard copper services, this exchange can offer ADSL broadband speeds of around 8-24Mbps at this time. This exchange has been enabled to provide BT Fibre Essential, Fibre 1 and Fibre 2 over FTTC technology with speeds from the local cabinet of 35-73Mbps indicated to the building (Data via the BT website). Caerphilly Exchange to the north east affords a greater 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 052 0422 www.virginmedia.com

SUMMARY

The BT copper and fibre services available at the Treforest Exchange, and added resilience of a second exchange afford 18 Centre Court a good 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 outside of the building and the local environs affords a good choice of alternative carrier to provide fibre services to any incoming tenant at this time based on our inspection.

RATING

BT	3
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 Fibre Essential, Fibre 1, 2, 100, 300, 500 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

18 Centre Court, Treforest Industrial Estate, Pontypridd CF37 5YR

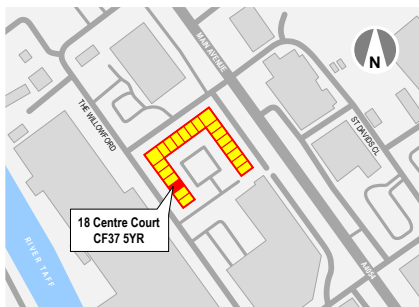
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Location Plan



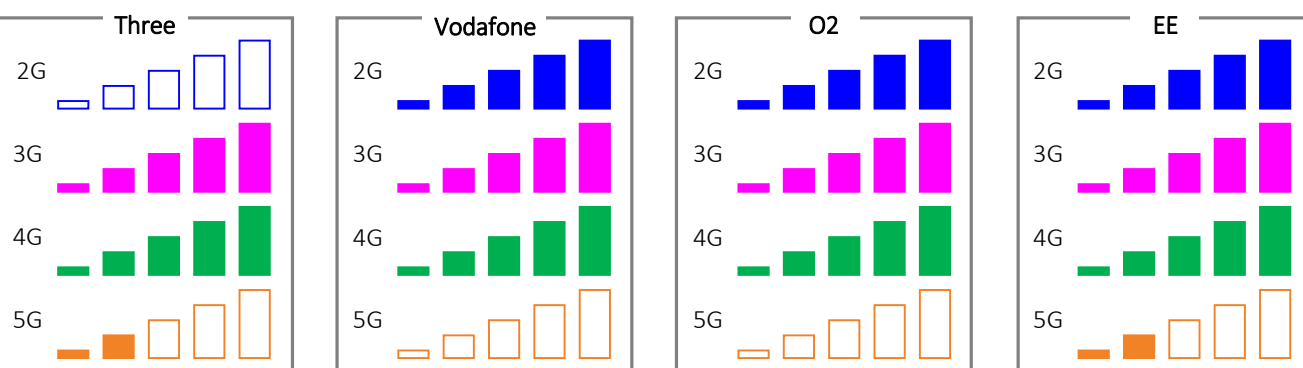
Building Observations

- Building sits in a business park environment
- Adjacent buildings of varying height with good separation
- 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 18 Centre Court affords an excellent level of macro coverage from all operators for 2G, 3G and 4G services, with only a low level of 5G services available from Three and EE. 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 a low level of 5G services from Three and EE.

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 all impact on the penetration of signal throughout a building. Based on this, it is envisaged that a good level of coverage will be present throughout the building for 2G, 3G and 4G services, with no usable 5G envisaged internally across all operators. 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	1
Vodafone	4	4	4	0
O2	4	4	4	0
EE	4	4	4	1

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

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 September 2022. 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)



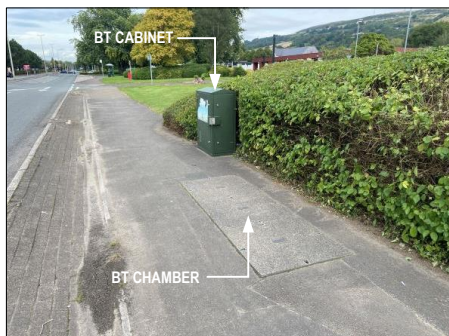
VIEW LOOKING NORTH WEST ALONG MAIN AVENUE



LOOKING SOUTH EAST ALONG MAIN AVENUE

Local Carriers

Centre Court has primary telecommunications access from the rear of the buildings via the external services cupboards. The survey identified and noted a good number of telecommunications chambers, and associated infrastructure and cabinets owned and operated by BT and Virgin Media along the length of Main Avenue on both sides of the carriageway predominantly in the footways (See **Photographs 1 to 6**). Infrastructure from both carriers extends into The Willowford around the complex on all sides. It was noted that dedicated BT infrastructure and chambers are present to the rear of all units providing connections into the externally accessed service cupboards. The level of infrastructure from Virgin Media also extends from Main Avenue around the building with noted chambers and access 'tees' located outside of each separate building unit for ease of connection from The Willowford. Similar Virgin Media infrastructure was not identified along the eastern elevation of the building at this time, but is deemed available from Main Avenue if required. No other infrastructure from alternative carriers was identified within the location of the building deemed suitable for extension and connection at this time.



PHOTOGRAPH 1
EXISTING BT CABINET AND CHAMBER IN FOOTWAY
ON MAIN AVENUE TO THE NORTH EAST OF BUILDING



PHOTOGRAPH 2
EXISTING BT CHAMBER ON THE WILLOWFORD ADJACENT
TO JUNCTION WITH MAIN AVENUE



PHOTOGRAPH 3
EXISTING BT CHAMBER IN FOOTWAY ON
THE WILLOWFORD TO NORTH OF BUILDING



PHOTOGRAPH 4
EXISTING VIRGIN MEDIA CHAMBER IN FOOTWAY ON MAIN AVENUE ADJACENT TO JUNCTION WITH THE WILLOWFORD



PHOTOGRAPH 5
EXISTING VIRGIN MEDIA CABINET AND CHAMBER IN FOOTWAY ON MAIN AVENUE ADJACENT TO BUILDING



PHOTOGRAPH 6
EXISTING VIRGIN MEDIA CHAMBER IN FOOTWAY ON THE WILLOWFORD ADJACENT TO BUILDING

Building Presence

The primary telecommunications intake for the building is located in the ground floor service cupboard at the rear of the building. BT enter this location via a single duct (90mm diameter approx) in the floor from their external chamber affording access for their copper services (See **Photographs 7 to 12**). The BT copper services are delivered over a single cable terminated in a distribution point (DP) on the wall with all outgoing services running up the wall into the building at ground floor ceiling level with ongoing access across all floors. Based on the cable size and markings we consider a total of 50 copper pairs are present, albeit subject to confirmation from BT. At present there are no fibre services to the building from BT. However, based on other units, this is deemed to be available albeit subject to survey and installation by BT if required. As detailed in the previous section, Virgin Media services are deemed to be available to the building albeit from the front elevation. On inspection both externally and internally these were not found to be in place at this time.



PHOTOGRAPH 7
TYPICAL VIEW OF SERVICE CUPBOARD ACCESSED FROM THE REAR OF BUILDING



PHOTOGRAPH 8
TYPICAL VIEW OF THE BT CHAMBER ADJACENT TO SERVICES CUPBOARD



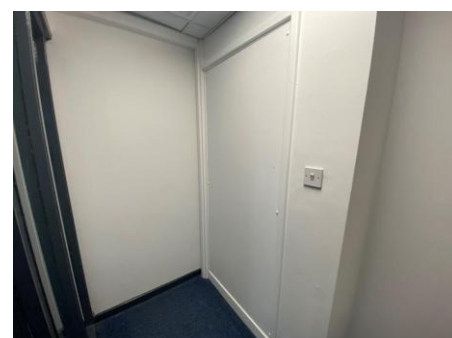
PHOTOGRAPH 9
TYPICAL VIEW OF BT DUCT ENTRY POINT AND BT COPPER SERVICES/ DISTRIBUTION POINT



PHOTOGRAPH 10
TYPICAL VIEW OF BT COPPER SERVICES EXITING THE REAR SERVICE CUPBOARD INTO SUSPENDED CEILING



PHOTOGRAPH 11
TYPICAL VIEW OF SURFACE TRUNKING AFFORDING ACCESS FROM CEILING FOR INTERNAL TELECOMS CABLING



PHOTOGRAPH 12
TYPICAL VIEW OF EXISTING SEALED PANELS AFFORDING VERTICAL ACCESS TO UPPER FLOORS

Risers and Cable Routes

Access from the primary telecoms intake point to the tenants floors is afforded via the ground floor suspended ceiling via surface trunking within the internal office space. Actual cable routes across the floors was not visible and it is considered that all access vertically is via sealed panels to suit. Based on our inspection of the building we conclude that access to all floors is potentially good in respect of cable routes and available space, predominantly via suspended ceilings and surface trunking.

Service Availability

The standard services afforded by BT over its existing copper networks can offer ADSL broadband speeds of around 8-24Mbps at this time. This exchange has been enabled to provide BT Fibre Essential, Fibre 1 and Fibre 2 over FTTC technology with speeds from the local cabinet of 35-73Mbps indicated to the building (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. The presence of Virgin Media outside of the building affords a good level of alternative services should it be required, delivering a similar range of fibre products to that of BT via a business tariff such as a leased fibre line.

Summary

Based on the level of infrastructure and the availability of services from BT's local exchange we consider 18 Centre Court has a good level of connectivity with the ability to enhance this by means of fibre services where required in minimal timescales from order albeit subject to survey and installation. Furthermore, the presence of Virgin Media outside of the building greatly increases the connectivity of the building albeit subject to new building entry requirements.