

# Telecommunications Connectivity

## Fixed Network and Mobile Coverage Assessment

Prospero  
73 London Road  
Redhill  
RH1 1LQ



## FIXED NETWORK SERVICES

| BUILDING ENTRIES    |                           |
|---------------------|---------------------------|
| DUCT ENTRIES        | 4No. TOTAL                |
| LOCATION            | BASEMENT (EAST ELEVATION) |
| SECURITY            | EXCELLENT                 |
| OWNERSHIP           | LANDLORD                  |
| DIVERSITY AVAILABLE | YES                       |
| STATUS (CAPACITY)   | SPARE CAPACITY AVAILABLE  |

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

| SERVICES     |   |
|--------------|---|
| BT OPENREACH | COPPER + FIBRE SERVICES – BASEMENT/ACROSS BUILDING (BMS ROOM)<br>ADSL BROADBAND AT 8-19Mbps |
| VIRGIN MEDIA | FIBRE SERVICES – BASEMENT/ACROSS BUILDING   |
|              |   |

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

| BUILDING DISTRIBUTION |  |
|-----------------------|--|
| RESILIENCE            | SECURE INTAKE LOCATION IN BASEMENT (EAST ELEVATION)                          |
| RISERS                | SECURE RISER AVAILABLE – RESTRICTED ACCESS                                   |
| SECURITY              | EXCELLENT SECURITY THROUGHOUT, INTAKE POSITIONS IN RESTRICTED ACCESS AREA.   |
| TENANT FLOOR SPACE    | EXCELLENT CONNECTIVITY/EASE OF INSTALL FROM RISER VIA RAISED FLOORS/CEILINGS |

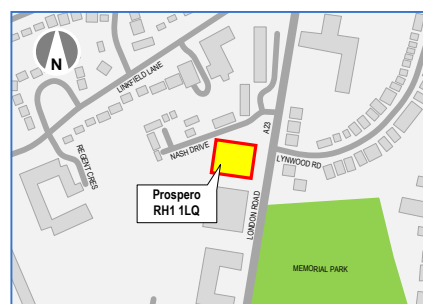
## MOBILE NETWORK SERVICES

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



## Prospero

73 London Road  
Redhill RH1 1LQ



### Fixed Network Services

|                       |           |
|-----------------------|-----------|
| BT Services           | Excellent |
| Other Carriers        | Excellent |
| Building Distribution | Excellent |

### Mobile Network Services

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

STRUCTURE

Prospero is an established commercial property located on London Road to the east of Redhill town centre. The building extends to ground and three upper floors plus basement car parking and plant rooms affording approximately 4,112 sq ft (382 sqm) of available 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 and sits within an environment of other commercial and residential properties of varying height in all directions.

TOPOGRAPHY

### Location Plan

### BT Exchange Locations

Routes and distances are indicative only

#### BT Exchange Information

|  |                              |
|--|------------------------------|
| <b>Primary Exchange</b><br>(650m approx)     | REDHILL (LSRED)<br>RH1 1QY   |
| <b>Secondary Exchange</b><br>(2,700m approx) | MERSTHAM (LSMERS)<br>RH1 3ED |

BT SUMMARY

Prospero is located approximately 650m from the BT Redhill Exchange, which is situated to the south west 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, Redhill Exchange can offer ADSL broadband speeds of around 8-19Mbps at this time. This exchange has been enabled to provide BT Infinity services over FTTC technology with speeds of up to 80Mbps download and 20Mbps upload. However, the building is noted as currently 'exploring solutions' in respect of FTTC technology delivery but provides no timescales for deployment at this time (Data via the BT website). Merstham Exchange to the north east affords a lesser range of services, but 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 Redhill Exchange, and added resilience of a second exchange afford Prospero 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 building with Vodafone outside 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 via the Landlord ducts.

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

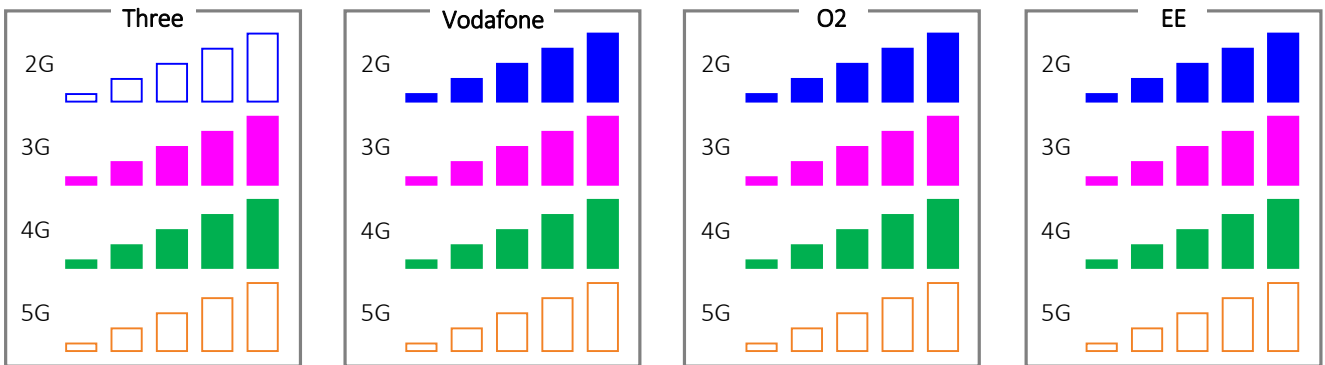
**Location Plan**

**Building Observations**

- Building sits in a commercial/residential environment
- Adjacent buildings of varying height in all directions
- 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 Prospero 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 is not currently 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 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**

- 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 and basement areas 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 17<sup>th</sup> February 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 LONDON ROAD



VIEW LOOKING SOUTH ALONG LONDON ROAD

### Local Carriers

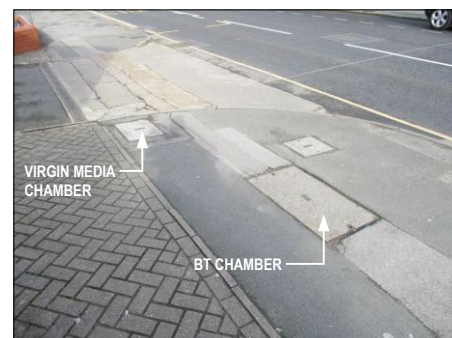
Prospero has existing telecommunications access from London Road on the east elevation of the building into the basement car parking area. The survey located a good level of telecommunications chambers and infrastructure owned and operated by BT, Virgin Media and Vodafone outside of the building along London Road predominantly in the footway (See **Photographs 1 to 6**). The presence from BT is extensive in this area with infrastructure running along the building frontage on both sides of the carriageway. The level of infrastructure from Virgin Media follows a similar path to that of BT with noted chambers in the footway along London Road outside of the building. The infrastructure from Vodafone is less comprehensive with chambers and infrastructure noted in the footway on the east side of London Road opposite the building, but is considered potentially viable for extension and connection, albeit subject confirmation from the carrier.



**PHOTOGRAPH 1**  
 EXISTING BT CABINET AND CHAMBER ON WEST SIDE  
 OF LONDON ROAD TO SOUTH OF BUILDING



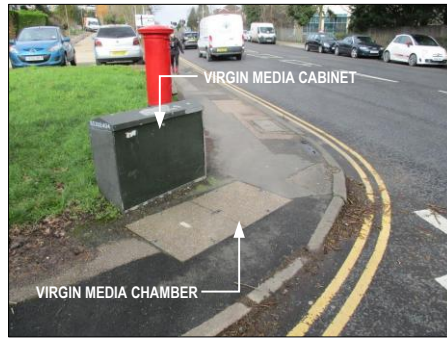
**PHOTOGRAPH 2**  
 EXISTING BT CHAMBER IN FOOTWAY ON WEST SIDE  
 OF LONDON ROAD TO SOUTH OF BUILDING



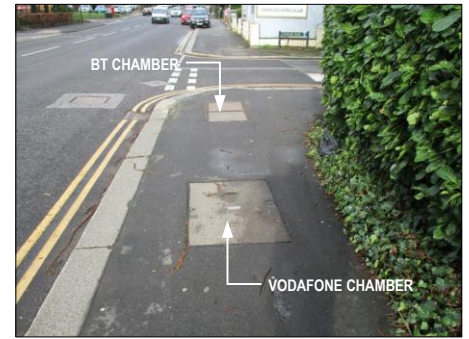
**PHOTOGRAPH 3**  
 EXISTING BT AND VIRGIN MEDIA CHAMBERS IN FOOTWAY  
 ON LONDON ROAD ADJACENT TO BUILDING



**PHOTOGRAPH 4**  
 EXISTING BT CHAMBER IN FOOTWAY ON  
 LONDON ROAD OUTSIDE BUILDING



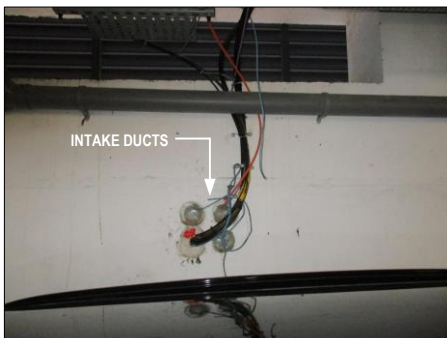
**PHOTOGRAPH 5**  
 EXISTING VIRGIN MEDIA CABINET AND CHAMBER  
 IN FOOTWAY ON LONDON ROAD TO NORTH OF BUILDING



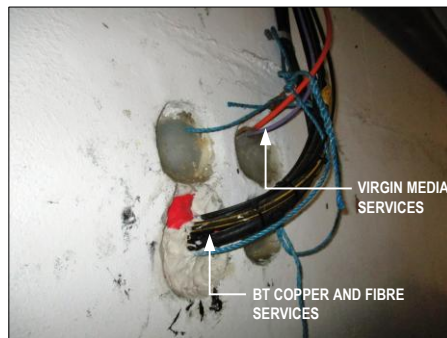
**PHOTOGRAPH 6**  
 EXISTING VODAFONE AND BT CHAMBER IN FOOTWAY  
 ON LONDON ROAD OPPOSITE BUILDING

### Building Presence

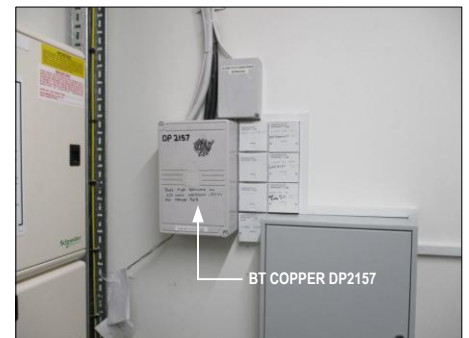
The telecommunications intake for the building is located on the east elevation into the basement car parking area from London Road (See **Photographs 7 to 12**). A total of 4No. 90mm diameter (approx) ducts are present considered to be Landlord owned. BT enter this location via one of the ducts providing access for their copper and fibre services. The copper services are delivered over 2No. cables terminated in a distribution point (DP) DP2157 on the wall in the basement BMS room. Based on the cable sizes and DP, we consider that a total of 120 copper pairs are present, albeit subject to confirmation from BT. The BT fibre services are delivered over 3No. cables (multiple tubes/fibres) which run directly to the building riser. Termination points from external to internal tubes were not located and are potentially deemed to be located at high level on the containment in the basement. Based on the incoming cables identified and their sizes we consider that a total of 13No. blown fibre tubes with a capacity of 4/12No. fibres per tube (52/156No. fibres total) are present at this time, albeit subject to confirmation from BT. Virgin Media enter the building via one of the other ducts affording access for their fibre services. The services are provided over two cables, with only one physically marked (purple). The second cable (orange) is deemed to be owned by Virgin Media based on colour, but would be subject to further invasive investigation if required. Both cables run directly to the building riser and tenants demises at this time. All services run across the car park at high level on existing containment to the entry point of the vertical riser towards the centre of the building. It was noted that an existing rack is present within the BMS 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.



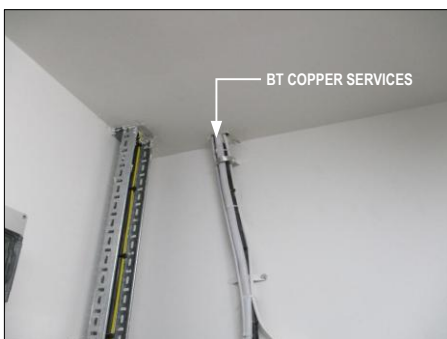
**PHOTOGRAPH 7**  
 TYPICAL VIEW OF INTAKE DUCTS AND SERVICES ON EAST  
 ELEVATION WALL IN BASEMENT CAR PARKING AREA



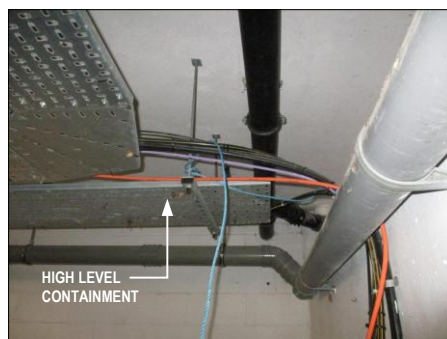
**PHOTOGRAPH 8**  
 DETAILED VIEW OF BT AND VIRGIN MEDIA SERVICES  
 IN BASEMENT CAR PARKING AREA



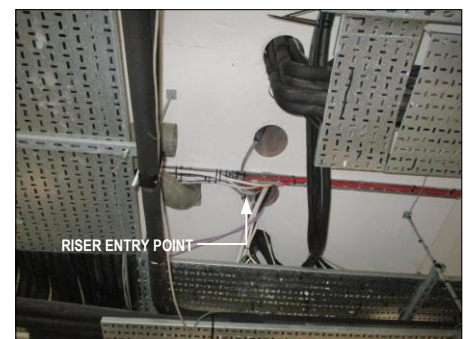
**PHOTOGRAPH 9**  
 TYPICAL VIEW OF BT COPPER DISTRIBUTION POINT  
 ON WALL IN BMS ROOM IN BASEMENT



**PHOTOGRAPH 10**  
 VIEW OF INCOMING / OUTGOING BT COPPER SERVICES  
 IN BMS ROOM ABOVE COPPER DP LOCATION



**PHOTOGRAPH 11**  
 VIEW OF CABLE ROUTE FROM INTAKE LOCATION TO HIGH  
 LEVEL CONTAINMENT IN BASEMENT CAR PARKING AREA



**PHOTOGRAPH 12**  
 TYPICAL VIEW OF CABLE ENTRY POINT INTO VERTICAL RISER  
 FROM BASEMENT CAR PARKING AREA



## Risers and Cable Routes

Access from the telecoms intake point run on high level tray work across the basement parking area into the vertical riser located towards the centre of the building. The riser runs the full height of the building with access on each floor into the tenants areas. 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 raised access floors and suspended ceilings (See **Photographs 13, 14 & 15**).



**PHOTOGRAPH 13**  
TYPICAL VIEW OF CABLE ENTRY INTO RISER ON GROUND FLOOR FROM BASEMENT PARKING AREA



**PHOTOGRAPH 14**  
TYPICAL VIEW OF EXISTING TELECOMS SERVICES IN RISER ON GROUND FLOOR TOWARDS CENTRE OF BUILDING



**PHOTOGRAPH 15**  
TYPICAL VIEW OF TELECOMS RISER ON GROUND FLOOR INDICATING AVAILABLE SPACE TO UPPER FLOORS

## 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 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 8-19Mbps at this time. Redhill Exchange has been enabled to provide BT Infinity services over FTTC technology with speeds of up to 80Mbps download and 20Mbps upload. However, the building is noted as currently 'exploring solutions' in respect of FTTC technology delivery but provides no timescales for deployment at this time (Data via the BT website). The level of copper services available from BT and other companies that can utilise the BT network will be able to provide enhanced speeds by use of bonded ADSL products where required to increase speed. Typically two 19Mbps ADSL lines bonded can increase speed to 38Mbps, increasing with the number of lines bonded accordingly. 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 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 Landlord 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 Prospero 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, Virgin Media and the Landlords managed services. In addition, the presence of the Vodafone 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.