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Telecommunications Connectivity

Combined Fixed Network and
Mobile Coverage Assessment

Corinthian House
17 Lansdowne Road
Croydon
CR0 2BX

Fixed Network Connectivity - Desk Top Study

Corinthian House, 17 Lansdowne Road, Croydon CR0 2BX

Oct 2011

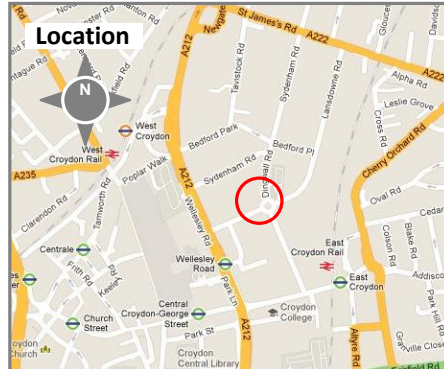
STRUCTURE

Corinthian House is a refurbished high rise office building located in Lansdowne Road at its junction with Dingwall Road in central Croydon. The building is over ten floors affording flexible office accommodation of around 5,000 sq ft per floor and is constructed of concrete and steel with windows to all floors on each side. The building is in close proximity to other similar height buildings to both sides.

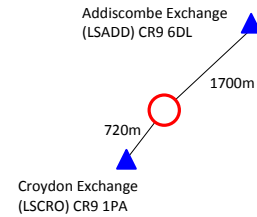
TOPOGRAPHY



Corinthian House
17 Lansdowne Road
Croydon CR0 2BX



BT Exchange locations



Note: All distances are straight line and cable routes will be greater. All distances and orientations are approximate only

BT SUMMARY

Corinthian House is currently served from the Croydon Exchange, located to the south west of the site. This exchange provides excellent services including ADSL, ADSL+, SDSL, (21CN WBC) FTTC, plus the availability of good LLU services from AOL, O2/Be, C&W Bulldog, Sky Easy Net, Talk Talk, and Tiscali all over BT infrastructure. Based on the FTTC capabilities, Croydon Exchange can offer broadband speeds of around 6.5Mbps (Data obtained via the BT website) over its existing network. The building is positioned on the fringe of the Addiscombe Exchange coverage area located to the north east, which affords similar services to that of Croydon Exchange at this time, with the exception of FTTC services which is forecast for 01/03/2012.

TELECOMS CARRIERS

Telecommunications carriers with owned infrastructure located within easy reach of 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 at the building location.

British Telecom Tel: 0800 800 152 www.bt.com

Cable & Wireless Tel: 0800 092 5825 www.cw.com

Virgin Media (NTL/Telewest Business) Tel: 0800 953 0180 www.virginmediabusiness.co.uk

Colt Telecommunications Tel: 020 7390 3900 www.colt.net

SUMMARY

The services available at Croydon Exchange afford Corinthian House with an excellent level of services to meet today's business needs. The presence of additional carriers with existing infrastructure over BT's network adjacent to the building, and within local environs, offers additional choice of services and resilience albeit this may be restricted by the location and cost of providing a service over owned infrastructure. However, the ability to provide such services over the BT network or another third party should not be overlooked as a more cost effective solution.

RATING

BT / LLU **4**

CARRIERS **3**

- BT / LLU**
- 1** Limited services available from BT only
 - 2** Good BT services, limited by LLU Operators
 - 3** Good BT/LLU services now, or planned
 - 4** Excellent BT/LLU services now, with diversity

- CARRIERS**
- 1** Limited infrastructure available
 - 2** Good level of infrastructure but with access issues
 - 3** Good level of infrastructure with limited access issues
 - 4** Excellent level of infrastructure with no access issues

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

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.

Mobile Voice / Data Appraisal - Coverage Predictions

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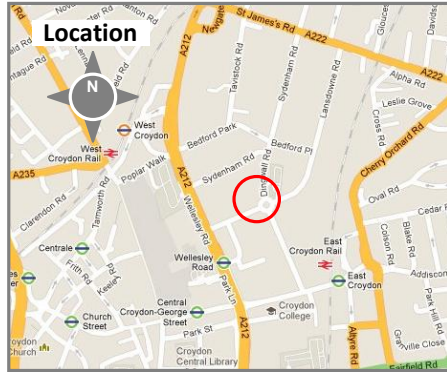
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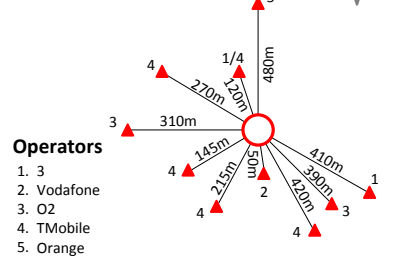


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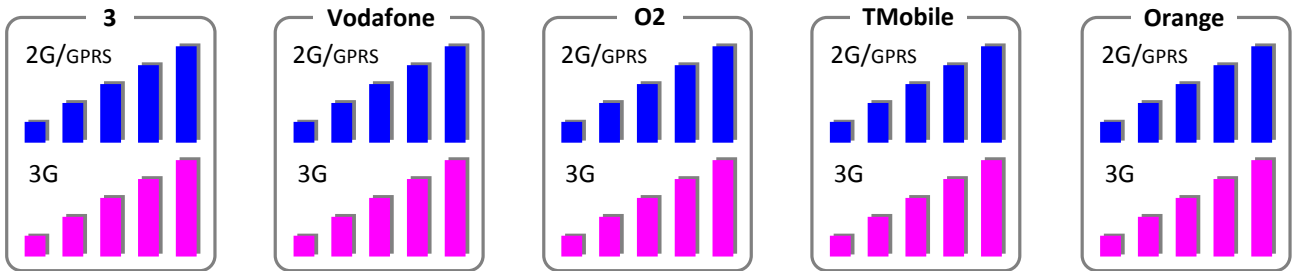


Macro Locations

Note: All distances and orientations are approximate only



STREET LEVEL COVERAGE



OBSERVATIONS

Corinthian House has an excellent level of macro coverage from all of the five mobile operators as shown in the plan above. The closest serving cells are detailed in respect of 2G and 3G services and can be seen vary in location and distance. The majority of cells will provide coverage to the buildings. Based on this information it is considered to be a location that affords very good overall coverage across all operators.

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

Based on the location of the site, its buildings and serving cells, it is envisaged that a good level of coverage will be present within the building for both 2G and 3G services, with potentially only small specific areas having issues due to their location such as internal rooms in the centre of the building. The close proximity of the adjacent buildings may cause some issues with shadowing, preventing signal penetrating the building from some macros. In addition, due to the number of close adjacent cells a degree of dropped calls may be experienced due to non dominance issues. This is due to handsets switching between cells during calls as each external cell competes to provide strongest signal.

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 / GPRS	3G
3	4	4
Vodafone	4	4
O2	4	4
T-Mobile	4	4
Orange	4	4

COVERAGE KEY - Indoor prediction

- 0 No coverage at this location
- 1 Indoor coverage unlikely
- 2 Limited indoor coverage
- 3 Variable coverage in all buildings
- 4 Good coverage to small buildings, variable in larger buildings
- 5 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.

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Fixed Telecoms Appraisal

In addition to the Fixed Network Desktop study completed, a review by survey of the above site was undertaken on 10th October 2011. The purpose of this survey was to clearly identify the presence of existing telecommunications carrier's infrastructure adjacent to the site.

Local Carriers

The level of infrastructure in the surrounding environs is one that encompasses a number of historic carriers, some now operating under alternative businesses (shown in brackets). On inspection a number of carrier's infrastructure is present along Lansdowne Road and Dingwall Road including Cable & Wireless (Mercury), Virgin Media (Telewest and NTL), Colt Telecommunications and British Telecom (BT).

Service Availability

The services afforded by BT over existing fibre and copper networks via their FTTC capabilities provides a good level of broadband services with speeds expected in the region of 6.5Mbps (Data obtained via the BT website). This with the availability of services from Cable & Wireless, Virgin Media and Colt Telecommunications provides a good alternative albeit with some potential requirements for infrastructure to connect into the building.

Summary

Based on the availability of services from BT's Croydon Exchange and alternative carrier infrastructure, we consider the building can be provided with fibre connectivity in minimal timescales from order. The presence of the Cable & Wireless, Virgin Media and Colt Telecommunications infrastructure in the adjacent area affords an excellent level of service and diversity at this time with minimal or no requirements for external street works.