Leeds
CITY COUNCIL

Requirements specification for New Extra Care Project

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Document Control and Distribution

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Table 1 Document Control

Name	Position	Date

Table 2 Document Distribution

Overall Infrastructure Specification

The establishments should enable communication technology access to and within the properties on the estates in line with the following:

- Digital Economy Bill - Electronic Communications Code 2017, (http://www.legislation.gov.uk/ukpga/2017/30/part/2/crossheading/electronic-communications-code)
- Meet the Data Ducting Infrastructure for New Homes published by the Department for Communities & Local Government (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/11496/dataducting.pdf}
- In addition it should meet the requirements of the major telecoms companies for new builds. By way of example: https://www.ournetwork.openreach.co.uk/resources/site1/General/Downloads/quick-guides/Quick_Guide_Duct_Laying.pdf, https://keepup.virginmedia.com/Content/networkExpansion/doc/New_Build_Developers_Guide.pdf.

Where the building is a single multi-occupancy block or the building provides office and service space for Leeds City Council or its partners, the construction shall provide a main communication room, this is where external communication ducting should terminate into the building. The build should provide ducting between the main communication room and the boundary to the public highway to avoid the requirement for any network operator to dig across the property, that termination point at the boundary should be a standard communications chamber sized to allow multiple network provider connections installed to acceptable communication industry standards. It is a requirement that all ducting and infrastructure from the boundary of the property to the buildings and there within remains the property of the building owner and not a network provider to facilitate consumer choice.

The main communication room will be secure, environmentally controlled (air conditioning, if required, should of a suitable type) and protected from flood and fire. Note that if a fire suppression system is fitted then this must not be a water based system, but an appropriate approved gas type system. The room should be controlled by a building access system that controls and records access to the room. The room should be capable of housing main incoming telecommunication provider lines & equipment and three standard lockable 42U x 1000mm deep computer racks with adequate working space around the cabinets. The three cabinets will be designated for separate purposes, one for residential, one for LCC and one for external parties such as the onsite care management provider, hairdresser etc.

Where the estate consists of multiple buildings and out buildings, communication ducting should be provided between the main communications room and those other buildings in line with the DCLG guidance.

Power to the main communication room will provide a 32 amp supplies to each of the three computer racks and a number of wall mounted standard 13amp sockets, the power within the room shall be secured with an Uninterruptible Power Supply arrangement which is dedicated for that purpose.

Where the building is a multi-floor office or multi-occupancy building then structured Ethernet cabling should route on each floor to a concentration point on that floor. That point should provide connection through appropriate ducting arrangements to the main communication room. That concentration point should terminate the cabling into standard 19” inch patch panels within standard 19” racking of appropriate capacity and size to accommodate required routers and switches. That concentration point should be secured either within a dedicated room, cupboard or suitable secure cabinet and that arrangement has within it access to protected mains power.

Any installed Ethernet infrastructure will use Cat 7A, Low smoke zero halogen or low smoke free of halogen (LSZH or LSOH or LS0H or LSFH or OHLS), and fibre optic cabling and all cabling shall be clearly identified/labelled both on wall sockets and in wiring cabinets. Fibre optics should be used to ensure cable lengths are maintained within specification or to provide cost effective trunks between concentration points, however this should not be at the expense of secure separation of network traffic. End points should use matching technologies to maintain performance and integrity of the network. There shall be an available mains power socket within 3 metres of any Ethernet wall socket.

All containment shall comply with BSEN7671 and BS6701. All multiple cables shall be installed in trunking or conduits.

The Ethernet infrastructure shall be fully tested and complete schematics and testing results will be provided 14 days before handover or as specified in the contract.

Note that installations that comprise of TV and entertainment systems together require multiple Ethernet connections and this is to accommodate increasingly common devices which require power and internet connection, such as: TV, TV box (e.g. Sky, TalkTalk Virgin etc.), Sound/cinema system, Smart streaming devices (e.g. Google Chromecast UHD), Gaming System (PS4). Where such installations are to be positioned, in communal or residential situations, there should be at least four Ethernet and power sockets provided.

Corporate LCC specification

The build should facilitate the provision of LCC DIS network access which is based on wired and wireless technologies through:

- Infrastructure should be capable of carrying as a minimum 1 Gigabit network traffic at low latency (as a minimum sub 50ms).
- The build shall provide wired Cat 7A, Low smoke zero halogen or low smoke free of halogen (LSZH or LSOH or LS0H or LSFH or OHLS) and fibre optic wired infrastructure to all office, other working areas and public areas which terminates into its cabinet in the main communication room.
- In order to facilitate flexible multi-organisational working at least two clearly labelled Ethernet socket shall be provided per desk or work station along with at least two standard power sockets.
- The wired infrastructure will provide Ethernet wired points to enable provision of ceiling mounted Wi-Fi Access Points in office, other working areas and public areas, it is expected that such installations will use Power over Ethernet (PoE) and not require an associated mains power socket.
- LCC intends to operate a number of wireless networks within the building in the non-public, public and communal areas (providing public and corporate services) and requires the ability to install or have installed its own wireless network equipment. This will provide multiple Wi-Fi networks to serve public, staff and health partners (through GovRoam service)
- Meeting room equipment consists of large screens and Polycom equipment to facilitate web conferencing. In addition to wall based power and network connections, the use such equipment and laptops in meetings means that power and network connections should be available from meeting tables or from the floor underneath such tables.

External Parties

External parties may require both wired and wireless network provision which will be based through:

- The build shall provide wired Cat 7A, Low smoke zero halogen or low smoke free of halogen (LSZH or LSOH or LS0H or LSFH or OHLS), infrastructure to all office, other

working areas where external parties will operate, which terminates into the external party cabinet in the main communication room.

- LCC intends to operate a number of wireless networks within the building, one of those networks will be Leeds_Free_Wi-Fi which will provide small external operators to reach the internet. However, others may require separate Wi-Fi provision installing by their own supplier/partner and the infrastructure should support this requirement. Therefore in office, admin and working areas ceiling located network points should provide two Ethernet points, installed to allow installation of two separate WiFi systems.

Facilities Management

The build shall provide wired infrastructure for any required machine to machine control systems such as smart building controls, building access (e.g. door) controls, CCTV etc. which routes them back to through main communications room. Discussions must be held with LCC DIS during design and agreement attained around the implementation of such infrastructure and facilities and its connection to any external service. Specifically, 2 x Ethernet points should be available, within suitable distance, for use by the following if installed in the building:

- Fire alarm control installation
- Lift monitoring system
- CCTV Monitoring System
- Door Access control system
- Intercom systems
- Lighting systems

Appropriate Ethernet sockets installed in Lift, Plant and Electrical Intake rooms as required by the manufacturer of any installed equipment, where the operation of that equipment requires voice or data communication for operational or maintenance purposes.

The designer shall allow for the CCTV, door access/intercom equipment to be installed within the comm's room.

The mechanical designer may also have to install a water supply within service risers, so both designers shall ensure that the water supply is not above any electrical equipment.

Any wireless based systems which uses common technologies and frequencies (e.g. 433 MHz, 868 MHz, 2.4 GHz, 5 GHz and 60 GHz) will need to be discussed and agreed with LCC DIS before procurement and deployment to avoid incompatibility and interference issues.

Residential specification

In line with DCLG guidelines the residences will be provided with a network cabinet which provides at least the following:

- Access through structured cabling to the main communication room to allow routing of providers internet connections to a resident.
- Provision of communal access to other transmissions e.g. communal TV aerial, satellite etc.

In line with DCLG guidelines the residences will be provided with ducting from the network cabinet which provides connection facilities throughout the property for technology equipment, e.g. smart TV, computer, games console, tele-health care equipment etc. The cabinet should be capable of housing an ISP's residential router if required.

Residents are free to choose their own network operator provision, the infrastructure should facilitate that requirement. If the intention of the contractor is to provide a common internet service to residents then discussions will need to be held with LCC DIS and Information Governance around the capabilities of such a provision and any requirements that LCC may wish to place around any community facility. Note that current provision from ISP's under there ultrafast

provisions reach around 330Mb per second, with Gigabit being predicted in the medium term, any infrastructure deployed must be capable of carrying these services at those levels.

It is likely that the future will bring the increased use of technology which has an increased demand in both capacity of network use and in terms of wireless endpoints. The use of smart devices around the home, the increased use of personal smart wear and the increasing use of telecare assisted living devices means that properties will become much more dense places of wireless communication.

Public, Communal and Multi-use areas

Adequate power and communication infrastructure should be in place to support the following technologies within these areas:

- installation and operation of electronic information signs and boards
- TV and other media systems
- Smart monitors, displays and devices associated with facilities management
- Ceiling or wall based data end points to allow the installation of Wi-Fi access points which will provide both public (Leeds Free Wi-Fi) and corporate network access.

Agreement to be reached during the design and build with LCC Digital Information Service for the following:

During the design and during the build process consultations must be held with LCC DIS in relation to communications and computer infrastructure.

The specialist Comm's Contractor to contact LCC ICT department during design and build to ensure adherence to national standards and practices for local government and health governance and security protocols.