

IT Services/Estates and Facilities

IT and Estates and Facilities stakeholder roles & responsibilities in Capital Projects

Document Approval

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IT Services

# Definitions

* **Estates and Facilities Network Systems Specialist (E&F NSS)** : - The Estates and Facilities representative assigned to the Project
* **IT**: - University of Reading IT Department
* **IT Framework Partner**: - The supplier of data switching equipment to IT
* **IT Infrastructure**: - Network data switches and associated hardware installed and maintained by IT
* **Physical Infrastructure**:- cabling / fibre optics and all associated containment , ducts , racks etc.
* **Project Manager**: - The Estates and Facilities Project Manager
* **Design Team**:-The team of Consultants led by the Project Manager to deliver the completed design
* **Audio Visual Framework Partner**: - The supplier of Audio –Visual equipment to The University
* **Audio Visual consultant**: - Specialist Consultant appointed by the Project Manager
* **Practical Completion:-** The completion of all the construction work that has to be done and the point at which the employer is able to take possession of the works.

# Introduction

IT provides project consultancy and management around IT & IT Infrastructure specifications on University capital projects. It is therefore important that IT and Estates and Facilities coordinate their respective roles to ensure the successful delivery of the telecommunications and audio visual aspects of any project. This document outlines the roles and responsibilities of both E&F and IT in order to assist in the delivery of the same.

# Communications Infrastructure

IT is the provider of voice and data services across the University and is therefore responsible for the functional/logical design of the voice and data networks. This includes the point-to-point connectivity requirements and the live equipment (data and telephone switches). IT manage and maintain the voice and data services, working with the University appointed data and voice framework partners.

Estates and Facilities are responsible for the physical infrastructure of the cabling, fibre optics, duct routes and communications racks, power supplies, environment, location and for the maintenance of the same.

In order to ensure that the communications infrastructure is designed to meet the functional requirements of the customer with adequate provision to adapt to meet future requirements, it is essential that both IT and the Estates and Facilities Network Systems Specialist are included as stakeholders in all projects and any other works that may impact the communications infrastructure or services.

The Director of IT shall be notified of any new Capital Project and will ensure that the appropriate IT resources are allocated. It is a requirement that IT are kept informed of the Programme of works and milestones. It is of particular importance that IT is consulted in advance of any works that may impact live services.

The Project Manager must ensure that there is a funding allowance for the IT equipment, telephones and any associated fees.

The various roles and responsibilities are summarised in the matrix in section 6.

## Data Network

In accordance with the Project programme, IT will:-

* Prepare the logical design of the data network and specify point-to-point connectivity and switching requirements to enable the design team to include the physical network infrastructure in the overall design.
* Confirm budget costs for both equipment and fees
* Provide quotations for the supply, delivery and installation of equipment. *(Note: - the first year’s maintenance of the switching equipment to be included in the project and the quotations supplied will include this. Thereafter responsibility for annual support costs and any future technology refresh transfers to IT).*
* Install switching equipment and configure the network to meet customer requirements. *(Note that this work takes place once IT is notified by the Network Systems Specialist that the physical data network infrastructure has been accepted as ready for use. However It is sometimes necessary to provide data network connectivity for some building services such as BMS prior to Practical Completion)*
* Cross-charge for the supply of equipment or resources supplied by IT and advise the Project Manager of the same.

## Telephones

University telephone installs, moves and changes are carried out by IT and are charged to the Project on a per extension basis.

In accordance with the Project programme, IT will:-

* Specify point-to-point network connectivity and any other physical infrastructure requirements.
* Confirm budgetary costs for the telephone installations
* Install new telephone extensions, relocate existing telephone extensions, and provide alarm circuits*. (Note ;- This work will take place once IT is notified by the E&F Network Systems Specialist that the physical voice network infrastructure has been accepted as ready for use. However it is sometimes necessary to provide some telephone services such as lift phones and alarm pairs prior to Practical Completion)*..

# Audio Visual and Teaching Technology

Audio Visual equipment includes all items used as teaching aids , projectors , screens , interactive boards , Plasma / LED / LCD flat panel screens , audio and public address equipment , visualisers , digital signage , video walls, videoconferencing equipment ,associated control equipment and furniture or equipment racks etc .

The University has an Audio Visual (AV) framework partner which the project may consult on the design, supply and installation of AV equipment for additions and alterations to simple or standard installations such as classrooms or meeting rooms.

For larger or more complex projects, an Audio Visual Consultant should be appointed by the Project Manager to design the AV systems and to provide a specification for the AV framework supplier to provide a quotation. Whichever option is chosen, the design must always be signed off by IT and the team must therefore consult with IT to confirm that both user’s functional requirements and the University standards are met.

IT retain the responsibility for managing and maintaining the AV equipment and teaching technology (including PCs) in centrally bookable rooms or communal PC facilities , they are therefore to be regarded as the client ( or “User” ) in the responsibility matrix in section 5 of this document .

Any desktop or portable PCs in the teaching technology requirements must be procured from the University’s appointed framework partners.

The AV consultant should:

* Provide a design specification based on the University’s functional requirements
* Detail the requirements for any containment, power, cabling or data connectivity to be installed as part of the construction;
* Liaise with the E+F NSS to obtain acceptance of the scheme

The AV Framework partner should:-

* Provide budget estimates in advance of detailed specification
* Provide fixed price quotations for the supply , installation , commissioning , bringing into service and handing over complete installations of Audio Visual teaching equipment
* Liaise with the E&F NSS regarding the Programme requirements
* Install the AV equipment in accordance with the construction Programme

In all cases, IT must be engaged to:

* Assist the design team to confirm the user AV requirements and ensure that the University standards are met;
* Specify the AV requirements for centrally bookable rooms and communal PC facilities
* Agree and sign off all A/V designs as suitable and sufficient
* Receive the installation at Practical Completion

# Other User IT requirements

## Installation of User PCs and other networked equipment

Following the installation of the physical infrastructure, IT is responsible for delivering a live data network service. The design team is responsible for arranging the connection of the customer’s networked PCs and equipment.

In order to configure the network and the PCs , and to provide the appropriate information to the user, IT require the details of all equipment that is to be connected in advance of Practical Completion and in sufficient time to ensure that IT resources are properly allocated .

IT will work with the user and IT desktop support team to resolve any issues that may arise following installation.

## User specific IT requirements

Where the user has more specialist IT requirements such as hosted servers and equipment, IT must be consulted by the design team on the specification of any associated infrastructure requirements. IT will also provide advice on hardware procurement etc. as and when required.

# Summary of Responsibilities Matrix

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **IT** | **Estates and Facilities** | **Design Team** | **User** |
| **Specification of Requirements** |  |  |  |  |
| User data requirements | I | I | R | A |
| User voice requirements | I | I | R | A |
| AV/Teaching Technology requirements | I | I | R | A |
| AV/Teaching Technology requirements (Centrally bookable rooms/PC facilities) | A | I | R |  |
| User wireless access requirements | I | I | R | A |
| Building Services data requirements | I | C | A,R |  |
| Building Services voice requirements | I | C | A,R |  |
| **Design** |  |  |  |  |
| Data network switching equipment | A | I | R |  |
| Wireless network | A | I | R |  |
| External links to University data network (point to point connectivity, cable type ) | A | C | R |  |
| External links to University voice network (point to point connectivity, cable type) | A | C | R |  |
| External cabling duct routes | C | A,C | R |  |
| Internal data cabling | C | A,C | R |  |
| Internal voice cabling | C | A,C | R |  |
| Internal cabling containment |  | A,C | R |  |
| Comms Rooms (size, location, environment) | C | A,C | R |  |
| Comms cabinets | C | A,C | R |  |
| Comms cabinets power requirements | C | A,C | R |  |
| AV/Teaching Technology requirements | C | C | A,R |  |
| AV/Teaching Technology requirements (Centrally bookable rooms/PC facilities) | A,C | C | R |  |
| Internal containment and power for AV/Teaching Technology | C | C | A,R |  |
| **Installation** |  |  |  |  |
| External duct routes for data and voice cabling | I | A,C | R |  |
| External data and voice cabling | I | A,C | R |  |
| Internal containment for data and voice cabling | I | C | R |  |
| Internal data and voice cabling | I | A,C | R |  |
| Comms rooms | I | A,C | R |  |
| Comms cabinets | I | A,C | R |  |
| Comms cabinet power supplies | I | A,C | R |  |
| Data network equipment procurement (including wireless access points) | A | I | R |  |
| Data network equipment installation | A,R | C | C |  |
| AV/Teaching Technology procurement (including PCs) | C | I | A,R |  |
| AV/Teaching Technology installation | I | C | A,R |  |
| AV/Teaching Technology installation (Centrally bookable rooms/PC facilities) | A,C | C | R |  |
| PC installation (Centrally bookable rooms/PC facilities) | A,R | C | C |  |
|  |  |  |  |  |
| R - **R**esponsibility for getting work done and for driving the group to make decisions in a timely manner  A - **A**ccountability - Final approval on accepting outcome  C - **C**onsult for acceptance of design or specification in meeting requirements prior to decisions  I - **I**nform after decision made. Wants to stay up to date on progress | | | | |

# Capital Projects Delivery Process - IT stakeholder involvement

The table below indicates the recognised stages in the lifetime of a Project and identifies the IT responsibilities and required involvement.

|  |  |  |
| --- | --- | --- |
|  | **Project Stage** | **ITS** |
| Project Startup |  | I |
| Stage 0 | Feasibility | I |
| Stage 1 | C, I |
| Stage 2 | Scheme Design | C, I |
| Stage 3 | Detailed Design | C, I |
| Stage 4 | Construction & Commissioning | I, R (voice and data services commissioning) |
| Stage 5 | Post Project | C |

Further information can be found at:-

<https://edms.reading.ac.uk/sites/EF/CPM/SitePages/Home.aspx>

# Responsibilities

The logical (or functional) requirements for any extension or adaptation of the University communications network informs the physical or “point to point” design. As part of the feasibility study for a Project, IT and Estates and Facilities will consult and agree the network infrastructure requirements. The E & F Network System Specialist will be responsible for translating this logical design into a schedule of construction requirements to be incorporated into the Project by the Design Team.

The E&F Network System Specialist will brief the Project Design Team on the particular University requirements for:-

* Communications cables, internal and external, fibre and copper and termination type;
* Structured cabling standards;
* Containment types and locations;
* Communications rooms, number of space requirements;
* Server rooms location and space requirements;
* Communications cabinets, frames, connections;
* Power supplies;
* Environmental Conditions;
* External duct routes, chambers (type and number), frames and covers (type and number);
* External duct entries and seals.

The Design Team is responsible for ensuring that the University requirements are incorporated into the scheme design and subsequently installed in accordance with good trade practice and Industry recognised standards. Should there be any conflict of standards or practice, the University will consider the issues on their own merits advise the Design team accordingly.

# Installer Responsibilities

The following table summarises installer responsibilities.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Item** | **Installed**  **By Main Contractor (MC)** | **Installed**  **By Electrical Contractor** | **Installed**  **By Electrical Contractor’s**  **IT Cabling Specialists** | **Installed by UoR or their directly employed sub-contractors** | **Comments** |
| PC’s, Phones, including baluns etc |  |  |  | ✓ | UoR to establish numbers, provide and install |
| Cables between RJ45 outlets and PC/Phone position. |  |  |  | ✓ | UoR to establish numbers, provide and install |
| RJ45 outlet back boxes |  | ✓ |  |  | Designers to specify locations/numbers based upon briefing provided by UoR Stakeholders. Specialist system designers (ADT, HG, Schneider, Deaf Alerter) to identify requirements (numbers/locations) to Main Contractor for inclusion at tender stage. |
| RJ45 outlets |  |  | ✓ |  |
| All IT containment within the building |  | ✓ |  |  | Designers to identify cable spec and primary containment routes, for final capacity check/co-ordination by Main Contractor. Final containment routes/sizes (conduit) to be established by the Contractor. |
| Structured cabling between RJ45 outlets and patch panels including terminations |  |  | ✓ |  |
| Patch Panels |  |  | ✓ |  | UoR to confirm voice/data split and size/capacity of panels. Designers to identify requirements in specification. |
| Cabinets for patch panels and active equipment |  |  | ✓ |  | UoR to advise their spacial requirements for equipment. Designers to relay requirements onto Architect for incorporation into scheme. |
| Patching leads |  |  |  | ✓ | UoR to provide and install all patching leads. |
| Hard wiring between cabinets |  |  | ✓ |  | UoR to advise requirements for cabling by the MC’s specialist contractor. Designers to relay requirements into Tender/Contract document. |
| External ducts and draw pits | ✓ |  |  |  | UoR to advise requirements in terms of routes and capacity of ducts/drawpits. Designers to co-ordinate routes in outline with other services and relay requirements into specification. Installation to be undertaken by the Main Contractor in accordance with Designers external services drawing/final co-ordinated installation drawing by MC. |
| Campus cabling for voice and data |  |  | ✓ |  | UoR to design and specify for Designers inclusion within M&E Tender/Contract documents. |
| Active equipment such as hubs, servers, ports, switches etc |  |  |  | ✓ | UoR to design, purchase/provide and install/commission equipment. |

# Standards

The standards applicable to voice and data requirements are summarised below:

* The University of Reading Standard Electrical Specification;
* BS 7671 IEE Wiring Regulations;
* National Joint Utilities Guides for the positioning and colour coding of Utilities underground apparatus;
* BS 6701:-2010, Telecommunications Cabling and Equipment;
* BSEN 50173-1to 4 : 2007, IT- generic cabling systems;
* BSEN 50174-1: 2009, IT cabling installations, specification and quality;
* BSEN 50174-2: 2009, IT cabling installations, internal;
* BSEN 50174-3: 2003, IT cabling installation, external.