

<b><u>Document Information Cover Sheet</u></b>
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## BRIGHTON 3Ts

### Equipment Interface Document

Document Reference: LOR-CO-SW-RP-0015

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F01	12 <sup>th</sup> March 2013	First issue for comment / approval
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## 1.0 Introduction

This document is intended to set out the roles & responsibilities for the design, installation and commissioning of major equipment within the 3Ts scheme.

## 2.0 Equipment Specifications

Within appendix a, there are the following documents: -

MTS-HP-ST1-0100

MTS-HP-ST2-0100

MTS-HP-SW-SH-0101

The documents represent the start point for the 1:50 local repeat and unique design process. Where this document adjusts the information included in the documents above, this document takes precedence as it reflects the baseline allowance for the GMP.

Subsequent to the 1:50 local repeat and unique process, BDP services produced a document BDP-ME-SW-SH-0007 Rev. F01 which highlights the mechanical and electrical requirements included as the baseline.

This document incorporates proposed manufacturers and products based on the clinical thinking as at June 2011 and on which the detailed design process has been developed to the current stage D level.

Any change in equipment specification which impacts on layout, service provision or builderswork will be considered a Compensation Event if received after agreement of the GMP.

All specialist equipment is considered to be Group 3 and where a specialist supplier / contractor is mentioned these are assumed to be employed by the Trust.

## 3.0 Scope of Works

### 3.1 CT Scanner

#### 3.1.1 Rooms affected

**The following scope of works affects the following rooms only:**

- CT Scanner Room – LR052

Brighton & Sussex University Hospitals  
Regional Centre for Teaching, Trauma & Tertiary Care

- CT Control Room – LR054 and LR089
- CT simulator – LR088

The above rooms will be left as a “Shell Space” by Laing O’Rourke for fit out by the Trust Turnkey provider.

It is anticipated that any works carried out by the Trust turnkey provider will take place after the handover of the shell space incorporating radiation protection sign off.

The works to be included as part of Laing O’Rourke works are listed below:

### **3.1.2 Services**

#### **3.1.2.1 Power:**

##### **Power to equipment:**

A 400v TP&N 295 kVA electrical supply will be taken from a new switch panel. The supply will be terminated at an isolator in the CT Scanner equipment room. Dimensional information to locate the isolator will be provided by the Trust turnkey provider.

Interconnecting cabling between the scanner room and the control room will be installed by Trust turnkey supplier. LOR will provide cable containment between the CT scanner equipment and the control room. Trust turnkey supplier are required to provide dimensional details of locations that the containment is required to terminate within each room, together with size of tray/basket required.

The high level cable trunking within the room will be supplied by LOR and installed by the Trust’s Turnkey provider. Size and length is to be determined from the Trust turnkey supplier final drawings.

It will be the responsibility of the turnkey provider to provide the necessary MEIGaN termination box and to ensure installations comply with MEIGaN.

##### **Small Power & Lighting:**

LOR will install the cabling and distribution as shown on BDP-EL-ST1-A00-GA-L04-6104 Rev. F02. Trust turnkey supplier will run circuits from the cabling and distribution in the corridors to provide lighting and small power outlets within scanner rooms. Note all sockets are to be provided through surface mounted dado trunking (Supplied and installed by the Trust turnkey supplier).

##### **IPS:**

New IPS equipment, supplied by LOR, to specifically serve the CT Scanner room, will be located in the new electrical cupboard. Cooling will be provided as part of the ventilation and cooling system. The IPS alarm panel will be located in the scanner control room.

**UPS:**

**Trust turnkey supplier Equipment UPS:**

It is anticipated that Trust turnkey supplier will provide a local UPS unit associated with CT scanner, to be located in the control room. Trust turnkey supplier to confirm. The impact of the weight of the UPS has yet to be tested.

**Metering:**

Electrical circuits will be metered and monitored. Each meter location will be provided with a data point.

**3.1.2.2 Room Environment**

The room environment will be set as per the temperature requirements as indicated in the environmental data matrix, BDP-ME-SW-SH-0004 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

**Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L04-5504 Rev. F03. LOR will supply the chilled water to just within the room and cap off. The Trust turnkey supplier will conclude all elements of the install from the cap off point.

**Ventilation:**

Fresh air and extract ventilation will be introduced to the scanner and control rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L04-5704 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply the ventilation to just within the room and cap off. The Trust turnkey supplier will conclude all elements of the install from the cap off point.

**Heating:**

Heating will be achieved via the ventilation system – see note above.

**Cooling:**

The cooling will be provided by the ventilation system – see above.

### **3.1.2.3 Medical Gases**

LOR will provide medical gases as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04 which will serve the CT scanner equipment room. Trust turnkey supplier will run medical gases from the local AVSU.

Note: Trust turnkey supplier will be required to use the specialist medical gases contractor employed for the main works for the fit-out works.

The medical gases alarm panel will be located in the scanner control room and will be installed by the Trust turnkey supplier.

Gas Scavenging is currently not provided to this room.

### **3.1.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. Trust turnkey supplier will install the fire alarm system from the network interface box to the equipment and control room.

Note: Trust turnkey supplier will be required to use the Trust's specialist fire alarm contractor for their connection into the network interface box.

### **3.1.2.5 Nurse call**

#### **Nurse Call:**

A new nurse call network cable will be provided by LOR, located within the ceiling void externally adjacent to the scanner control room. Cable containment will be provided from the box to the control room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. The Trust turnkey provider will supply and install within the trunking system the necessary call points etc.

#### **Crash Team Call system:**

The provision of a crash team call button (spider system) within the scanner equipment room is as per the indication within the equipment schedule LOR-CO-SW-SH0039 Rev. F3 and will be installed by the Trust turnkey provider.

### **3.1.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L04-5204 Rev. F02. There is currently no drainage shown within the CT scanner room itself, however, there is drainage within the CT scanner control room at high level.

Condensate Drains: Condensate drains will be run to drain connections to the drainage system. Trust turnkey supplier is required to advise where they require drains for condensate from the equipment.

### **3.1.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L04-5304 Rev. F02. LOR will supply the hot and cold water to just within the room and cap off. The Trust turnkey supplier will conclude all elements of the install from the cap off point.

### **3.1.2.8 BMS/Data**

#### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

#### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L04-6104 Rev. F02 and will be run from agreed hub room to the equipment and control rooms and left coiled up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.1.2.9 Access Control CCTV**

#### **Access Control & CCTV:**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.1.3 Finishes**

### **3.1.3.1 Floor:**

The floor will be dropped by 100mm compared to the adjacent floor to allow for service connection to the equipment.



Floor finishes, including the infill floor screed to bring the area to level will be supplied and installed by the Trust's turnkey provider.

### **3.1.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the CT Scanner and control room. Walls will be taped and jointed and sealed to manufactures requirements. No services or containment will be provided within th-e walls.

### **3.1.3.3 Ceiling**

Ceiling supply and install is by the Trust's turnkey provider.

### **3.1.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

### **3.1.3.5 Decoration**

All paint finishes, other decorations and wall protection within the CT scanner and Control room is supply and install by the Trust's turnkey provider.

### **3.1.3.6 Other**

#### **Glazed Screens:**

All glazed screens within partitions to be supplied and installed by the Trust's turnkey provider. Building works to be made known to the PSCP.

#### **Sanitaryware and FF&E:**

All sanitaryware and FFE within the rooms noted is supply and install by the Trust's turnkey provider.

## **3.1.4 Specialist Elements**

#### **Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the CT scanner room and control room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

#### **Warning Lights:**

Equipment in-operation warning lights at the entry points to the equipment and control rooms will be provided by the Trust.

### 3.1.5 Commissioning and Access

#### **Commissioning:**

Laing O'Rourke will commission all services up to where they are capped for extension by Trust turnkey supplier. Trust turnkey supplier will be responsible for commissioning all services within the CT scanner and Control room including any re-commissioning of entire systems.

#### **Access:**

The access arrangements are illustrated on the signed off 1:200 drawings

It is assumed that the overall access route for the equipment installation has been confirmed by the Trust with Trust turnkey supplier.

## 3.2 X-ray Imaging

### 3.2.1 Rooms Affected

**The following scope of works affects the following rooms only:**

- General Imaging – LR043

### 3.2.2 Services

#### **3.2.2.1 Power**

##### **Power to equipment**

Power for the scanner will be provided by Laing O'Rourke to an isolator as TP & N 400v 125kVA within the room. Distribution to the Trust equipment including containment, cabling & commissioning will be taken from the isolator and provided by the specialist equipment supplier.

It will be the responsibility of the specialist equipment supplier to provide the necessary MEIGaN termination box and to ensure the installations comply with MEIGaN.

##### **Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke as per BDP-EL-ST1-A00-GA-L04-6104 Rev. F02. The extent of the outlets within the room will be set by the equipment schedule LOR-CO-SW-SH0039 Rev. F3. Positions of the outlets will be agreed through the 1:50 room layout design process.

### **3.2.2.2 Room Environment**

Room environmental conditions will be provided as specified within the environmental data matrix, BDP-ME-SW-SH-0004 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

#### **Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L04-5504 Rev. F03. LOR will fully supply and install the chilled water to the termination points within the room.

#### **Ventilation:**

Fresh air and extract ventilation will be introduced to the scanner and control rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L04-5704 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to the termination points within the room.

#### **Heating:**

Heating will be achieved via the ventilation system – see note above.

#### **Cooling:**

The cooling will be provided by the ventilation system – see above.

### **3.2.2.3 Medical Gases**

LOR will provide medical gases as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04 which will serve the General Imaging rooms. LOR will install from the local AVSU to the final connection point.

### **3.2.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the General Imaging rooms.

### **3.2.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the scanner control room. Cable containment will be provided from the box to the control room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. LOR will supply and install within the trunking system the necessary call points etc. Locations are to be agreed through the 1:50 process.

### **3.2.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L04-5204 Rev. F02.

### **3.2.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L04-5304 Rev. F02. LOR will supply and install the hot and cold water to the termination points within the room.

### **3.2.2.8 BMS/Data**

#### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

#### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L04-6104 Rev. F02 and will be run from **agreed hub room** to the equipment and control rooms and left coiled up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.2.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.2.3 Finishes**

### **3.2.3.1 Floor**

#### **Floor:**

The floor will be dropped by 100mm compared to the adjacent floor to allow for service connection to the equipment. LOR will provide and install trunking to the location provided by the Trust specialist equipment supplier.

Floor finishes, including the infill floor screed to bring the area to level will be supplied and installed by LOR.

### **3.2.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the General imaging rooms. Walls will be taped and jointed and sealed to manufactures requirements. Services and containment will be provided within the walls as per the agreed 1:50 layouts once they are produced.

### **3.2.3.3 Ceiling**

Laing O'Rourke will provide a suspended ceiling as ceiling type 7 from LOR-CO-SW-SP-0005 Rev. F01 to a minimum clearance height of 2692mm as noted in MTS-HP-ST1-SH-0100.

Laing O'Rourke will supply, design & install a standard drop hanger ceiling support system. The Trust will be required to confirm the design and setting out of any additional supports required for the imaging equipment and free issue any additional support to LOR to enable install to meet the overall construction programme.

### **3.2.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

### **3.2.3.5 Decoration**

All paint finishes, other decorations and wall protection will be provided and installed by LOR.

### **3.2.3.6 Other**

#### **Glazed Screens:**

All glazed screens within partitions to be supplied and installed by LOR, but see the note below on the console screen.

#### **Sanitaryware and FF&E:**

Break down of sanitaryware and fixtures, furniture and equipment supply is determined by the ADB grouping 1 – 4 as shown on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### 3.2.4 Specialist Elements

#### **Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the General Imaging room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

#### **Warning Lights:**

Laing O'Rourke will install LIG073 Room in use lights as denoted within the equipment schedule LOR-CO-SW-SH0039 Rev. F3 (attached to the pass through changing room L130).

#### **Control Console with Lead Screen:**

The control console and lead screen will be supplied and installed by the Trust as per the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### 3.2.5 Commissioning and Access

#### **Commissioning:**

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

The PSCP will install final wire and connect up all lighting to the imaging equipment as per the specialist equipment supplier drawings and details.

#### **Access:**

It is expected that the equipment delivery size will allow access through standard leaf and a half door arrangement and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will occur after Laing O'Rourke completion during the Trust commissioning period.

## 3.3 MRI Scanners

### 3.3.1 Rooms Affected

The following scope of works affects the rooms:

- MRI Scanner – LR057
- Engineering/Technical Room – LR059
- Control Room – LR058

The above rooms will be left as a “Shell Space” by Laing O’Rourke for fit out by the MRI equipment supplier.

It is anticipated that any works carried out by the MRI fit out contractor will take place in the Trust commissioning period and after Laing O’Rourke completion.

The works to be included as part of Laing O’Rourke works are listed below:

### **3.3.2 Services**

#### **3.3.2.1 Power**

##### **Power to equipment:**

1 No. 400V TP&N 110KVA power supply will be provided by Laing O’Rourke to an isolator within the Engineering/Technical Room.

All distribution including cabling, containment & final fittings within all the above rooms is by the MRI fit out contractor.

It will be the responsibility of the MRI fit out contractor to provide the necessary MEIGaN termination box and to ensure installations comply with MEIGaN.

##### **Small Power & Lighting:**

LOR will install the cabling and distribution as shown on BDP-EL-ST1-A00-GA-L04-6104 Rev. F02 and BDP-EL-ST1-A00-GA-L05-6105 Rev. F02. Trust turnkey supplier will run circuits from the cabling and distribution in the corridors to provide lighting and small power outlets within the equipment and control rooms. Note all sockets are to be provided through surface mounted dado trunking (Supplied and installed by the Trust turnkey supplier).

##### **UPS/IPS**

IPS is currently excluded for this equipment.

UPS is provided by LOR. The weight impact has yet to be tested – it will only be tested once the weight and location is known.

#### **3.3.2.2 Room Environment**

Room environmental conditions will be provided as specified within the environmental data matrix, BDP-ME-SW-SH-0004 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

### **Chilled Water**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L04-5504 Rev. F03 and BDP-ME-ST1-A00-GA-L05-5505 Rev. F03.

LOR will supply the chilled water to just within the room and cap off. The Trust turnkey supplier will conclude all elements of the install from the cap off point.

### **Heating**

Heating will be employed to meet the temperature requirements as indicated in the environmental data matrix, BDP-ME-SW-SH-0004 Rev. F02.

### **Ventilation:**

Heating & ventilation ductwork will be provided to a single point outside the MRI rooms. All distribution including ductwork, grilles, controls, final connections will be carried out by the MRI fit out contractor. The design of the ventilation within the room is to be concluded by the Trust turnkey supplier to ensure compliance with the environmental data matrix as referenced above.

### **3.3.2.3 Medical Gases**

LOR will provide medical gases as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04. Trust turnkey supplier will run medical gases from the local AVSU including final connections and all necessary testing & commissioning thereof.

Note: Trust turnkey supplier will be required to use the specialist medical gases contractor employed for the main works for the fit-out works.

The medical gases alarm panel will be located in the scanner control room and will be installed by the Trust turnkey supplier.

### **3.3.2.4 Fire Alarm**

#### **Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control



room. Trust turnkey supplier will install the fire alarm system from the network interface box to the equipment and control room.

### **3.3.2.5 Nurse call**

#### **Nurse call**

A nurse call network cable will be provided to the external walls of the MRI suite coiled up to allow for final distribution and installation of termination points by the Trust turnkey supplier.

#### **Crash team call system**

As above.

### **3.3.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L04-5204 Rev. F02 and BDP-PH-ST1-A00-GA-L05-5205 Rev. F02. There is currently drainage within the MRI scanner room and control room at high level.

Condensate Drains: Condensate drains will be run to drain connections to the drainage system. Trust turnkey supplier is required to advise where they require drains for condensate from the equipment.

### **3.3.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L04-5304 Rev. F02 and BDP-ME-ST1-A00-GA-L04-5305 Rev. F02.

Hot and cold water will be brought to and capped off at an agreed point outside the MRI rooms. All distribution including final connections will be carried out by the MRI fit out contractor.

### **3.3.2.8 BMS/Data**

#### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

#### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L04-6104 Rev. F02 and BDP-EL-ST1-A00-GA-L05-6105 Rev. F02 and will be run from **agreed hub room** to the equipment and control rooms and left coiled up for Trust turnkey supplier to run to

outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.3.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.3.3 Finishes**

### **3.3.3.1 Floor**

Laing O'Rourke will provide a 100mm recess in the floor construction of the MRI room only to allow the Faraday Cage to be installed. The floor slab will be left as a structural slab and tolerances will be in line with British Standard.

In all the rooms above floor finishes will be installed by the Trust MRI fit out contractor.

### **3.3.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) walls to all rooms with the exception of the walls between the MRI rooms & the Control rooms and also the wall between the 2 MRI Rooms which will be completed by the MRI fit our contractor.

No services or containment will be provided within the walls.

The Trust MRI contractor will provide the faraday cage including supports for FFE, room decoration etc.

### **3.3.3.3 Ceiling**

No ceilings will be installed by LOR.

The Trust MRI contractor will install all required services and complete the ceiling including all finishes, M&E fittings etc.

### **3.3.3.4 Doors**

#### **Door:**

The door to the MRI Scanner Rooms will be providing by the Trust MRI Contractor because they are integral to the Faraday Cage.

Doors to the Equipment Room and Control Rooms will be supplied by Laing O'Rourke.

### **3.3.3.5 Decoration**

Decoration to the MRI scanner rooms is by the Trust. Decoration to the Engineering and Control room is by LOR.

### **3.3.3.6 Other**

#### **Glazed Screens:**

All glazed screens within partitions to be supplied and installed by the Trust's turnkey provider. Building works to be made known to the PSCP.

#### **Sanitaryware and FF&E:**

All sanitaryware and FFE within the rooms noted is supply and install by the Trust's turnkey provider.

## **3.3.4 Specialist Elements**

#### **Specialist Wall Protection:**

The Faraday Cage is to be designed, supplied and installed by the MRI fit out contractor and is specifically excluded from the LOR offer.

Any additional steel shielding required to floors walls or ceilings will be designed, supplied and installed by the Trust MRI fit out contractor and is specifically excluded from the LOR offer. Any electromagnetic surveys are also excluded by LOR.

Note, any additional steel protection required to the structural floor above the MRI, that sits above any rooms outside the MRI Room, Control Room or Equipment Room will need to be installed prior to 1<sup>st</sup> fix M&E.

#### **Quench Pipe:**

The Quench Pipe will be designed, supplied and installed by the Trust's MRI fit out contractor. However, the routes of the quench pipes will need to be as per the BDP document BDP-ME-ST1-RP-0002 Rev. F02 to meet the information contained on the planning drawings.

Laing O'Rourke will provide builderswork holes in the structure to accommodate the quench pipe.

#### **Extract Fan:**

There is currently no allowance for an extract fan from any of the MRI room.

**Warning Lights:**

Warning lights for the MRI room will be provided by the MRI fit out contractor.

### **3.3.5 Commissioning and Access**

**Commissioning:**

Laing O'Rourke will commission all services up to where they are capped for extension by the MRI fit out contractor. The MRI contractor will be responsible for commissioning all services within the MRI Suite.

**Access:**

Access panels will be provided in the external wall to the following locations and sizes: -

- Level 4 – East Elevation
- Level 4 – East Elevation
- Level 5 – North elevation
- Level 5 – North Elevation

Potential access routes have been identified in the LOR document LOR-CO-SW-RP-0012 Rev. F01 "LOR response to Trust flexibility policy"

Laing O'Rourke will allow for the removal and reinstatement of this panel when required for access during the Trust commissioning period only (not for future removal/installation).

The Trust MRI contractor will allow for the delivery, installation & all necessary temporary works / access equipment associated with getting the magnet through the external access panel.

The Trust MRI contractor will then complete internal finishes as described above.

## **3.4 Nuclear Medicine Department - Cardiac Camera**

### **3.4.1 Rooms Affected**

The scope of works below affects the following rooms: -  
Cardiac Camera – U020.

### **3.4.2 Services**

#### **3.4.2.1 Power**

**Power for equipment:**

Power for the Camera will be provided by Laing O'Rourke to an isolator within the room. Distribution to the Trust equipment including containment, cabling & commissioning will be taken from the isolator and provided by the specialist equipment supplier.

It will be the responsibility of the equipment supplier to provide the necessary MEIGaN termination box and to ensure installations comply with MEIGaN. Laing O'Rourke will provide the main earth to the agreed position for the MEIGaN earth reference bar.

**Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke to the requirements denoted in the equipment schedule LOR-CO-SW-SH-0039 Rev. F03.

**3.4.2.2 Room Environment**

Room environmental conditions will be provided as specified by the BDP environmental matrix as reviewed and agreed with the Trust BDP-ME-SW-SH-0005 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

**Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L02-5502 Rev. F03. LOR will fully supply and install the chilled water to the termination points within the room.

**Ventilation:**

Fresh air and extract ventilation will be introduced to the scanner and control rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L02-5702 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to the termination points within the room.

**Heating:**

Heating will be achieved via the ventilation system – see note above.

**Cooling:**

The cooling will be provided by the ventilation system – see above.

**3.4.2.3 Medical Gases**

There are no medical gases supplying this room.

#### **3.4.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the Cardiac camera rooms.

#### **3.4.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the scanner control room. Cable containment will be provided from the box to the control room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. LOR will supply and install within the trunking system the necessary call points etc. Locations are to be agreed through the 1:50 process.

#### **3.4.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L02-5202 Rev. F02. There are currently no drainage connections shown passing through this room.

#### **3.4.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L02-5302 Rev. F02. LOR will supply and install the hot and cold water to the termination points within the room.

#### **3.4.2.8 BMS/Data**

##### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

##### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L02-6102 Rev. F02 and will be run from agreed hub room to the equipment and control rooms and left coiled up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

#### **3.4.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

### **3.4.3 Finishes**

#### **3.4.3.1 Floor**

The floor will be dropped by 120mm compared to the adjacent floor to allow for service connection to the equipment as per the LOR dropped slab schedule LOR-CO-SW-SH-0037 Rev. F02. LOR will provide and install trunking to the location provided by the Trust specialist equipment supplier.

Floor finishes, including the infill floor screed to bring the area to level will be supplied and installed by LOR with the exception of the note below.

The Trust will be required to confirm the setting out for the floor trunking & imaging table within the timescales included towards the back of this document.

The lid for the floor trunking along with a strip of vinyl will be left open for when the imaging equipment is installed. The Trust will close the lid and complete the flooring including required welding.

A concrete base will be provided for the floor mounted table base plate to manufacturer's requirements.

#### **3.4.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the Cardiac camera room. Walls will be taped and jointed and sealed to manufactures requirements. Services and containment will be provided within the walls as per the agreed 1:50 layouts once they are produced.

#### **3.4.3.3 Ceiling**

Laing O'Rourke will provide a suspended ceiling as ceiling type 7 from LOR-CO-SW-SP-0005 Rev. F01 to a height of 2700mm.

Laing O'Rourke will supply, design & install ceiling within the room. The Trust will be required to confirm the setting out and design of any support within the ceiling for the equipment to enable the room design to be concluded with timescale required by the

programme. Any support above the ceiling for the equipment will be provided by the Trust.

#### **3.4.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

#### **3.4.3.5 Decoration**

All paint finishes, other decorations and wall protection will be provided and installed by LOR.

#### **3.4.3.6 Other**

##### **Glazed Screens:**

All glazed screens within partitions to be supplied and installed by LOR, but see the note below on the console screen.

##### **Sanitaryware and FF&E:**

Break down of sanitaryware and fixtures, furniture and equipment supply is determined by the ADB grouping 1 – 4 as shown on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.4.4 Specialist Elements**

#### **Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the scanner room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

#### **Warning Lights:**

Laing O'Rourke will install any required warning lights outside the room. Trust to confirm light specification & required method of operation.

#### **Control Console with Lead Screen:**

The control console and lead protective screen will be provided by the Trust. Any services required on this console will be terminated and tested in an adjacent partition for extension by the Trust.



### 3.4.5 Commissioning and Access

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

#### **Access:**

It is expected that the equipment delivery size will allow access through standard double doors and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will take place after Laing O'Rourke completion during the Trust commissioning period.

## 3.5 Nuclear Medicine Department – SPECT Gamma Camera

### 3.5.1 Rooms Affected

The scope of works below affects the following rooms:

SPECT Gamma Camera – LR030

### 3.5.2 Services

#### 3.5.2.1 Power

##### **Power for the equipment:**

Power for the Camera will be provided by Laing O'Rourke to TP & N 400v 4.2kVA to an isolator within the room. Distribution to the Trust equipment including containment, cabling & commissioning will be taken from the isolator and provided by the specialist equipment supplier.

It will be the responsibility of the equipment supplier to provide the necessary MEIGaN termination box and to ensure installations comply with MEIGaN. Laing O'Rourke will provide the main earth to the agreed position for the MEIGaN earth reference bar.

##### **Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke to the requirements denoted in the equipment schedule LOR-CO-SW-SH-0039 Rev. F03.

#### 3.5.2.2 Room Environment

Room environmental conditions will be provided as specified by the BDP environmental matrix as reviewed and agreed with the Trust BDP-ME-SW-SH-0004 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

**Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L02-5502 Rev. F03. LOR will fully supply and install the chilled water to the termination points within the room.

**Ventilation:**

Fresh air and extract ventilation will be introduced to the scanner and control rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L02-5702 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to the termination points within the room.

**Heating:**

Heating will be achieved via the ventilation system – see note above.

**Cooling:**

The cooling will be provided by the ventilation system – see above.

**3.5.2.3 Medical Gases**

There are no medical gases supplied to the SPECT camera rooms.

**3.5.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the Cardiac camera rooms.

**3.5.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the scanner control room. Cable containment will be provided from the box to the control room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. LOR will supply and install within the trunking system the necessary call points etc. Locations are to be agreed through the 1:50 process.

### **3.5.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L02-5202 Rev. F02. There are currently no drainage connections shown passing through this room.

### **3.5.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L02-5302 Rev. F02. LOR will supply and install the hot and cold water to the termination points within the room.

### **3.5.2.8 BMS/Data**

#### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

#### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L02-6102 Rev. F02 and will be run from agreed hub room to the equipment and control rooms and left coiled up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.5.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.5.3 Finishes**

### **3.5.3.1 Floor**

The floor will be dropped by 120mm compared to the adjacent floor to allow for service connection to the equipment as per the LOR dropped slab schedule LOR-CO-SW-SH-0037 Rev. F02. LOR will provide and install trunking to the location provided by the Trust specialist equipment supplier.

Floor finishes, including the infill floor screed to bring the area to level will be supplied and installed by LOR with the exception of the note below.

The Trust will be required to confirm the setting out for the floor trunking & imaging table within the timescales included towards the back of this document.

The lid for the floor trunking along with a strip of vinyl will be left open for when the imaging equipment is installed. The Trust will close the lid and complete the flooring including required welding.

A concrete base will be provided for the floor mounted table base plate to manufacturer's requirements.

### **3.5.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the SPECT camera room. Walls will be taped and jointed and sealed to manufacturer's requirements. Services and containment will be provided within the walls as per the agreed 1:50 layouts once they are produced.

### **3.5.3.3 Ceiling**

Laing O'Rourke will provide a suspended ceiling as ceiling type 7 from LOR-CO-SW-SP-0005 Rev. F01 to a height of 2700mm.

Laing O'Rourke will supply, design & install ceiling within the room. The Trust will be required to confirm the setting out and design of any support for the equipment to enable the room design to be concluded with timescale required by the programme. Support above the ceiling for the equipment will be provided by the Trust.

### **3.5.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

### **3.5.3.5 Decoration**

All paint finishes, other decorations and wall protection will be provided and installed by LOR.

### **3.5.3.6 Other**

#### **Glazed Screens:**

All glazed screens within partitions to be supplied and installed by LOR, but see the note below on the console screen.

**Sanitaryware and FF&E:**

Break down of sanitaryware and fixtures, furniture and equipment supply is determined by the ADB grouping 1 – 4 as shown on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### 3.5.4 Specialist Elements

**Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the scanner room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

**Warning Lights:**

Laing O'Rourke will install any required warning lights outside the room. Trust to confirm light specification & required method of operation.

**Control Console with Lead Screen:**

The control console and lead protective screen will be provided by the Trust. Any services required on this console will be terminated and tested in an adjacent partition for extension by the Trust.

### 3.5.5 Commissioning and Access

**Commissioning:**

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

**Access:**

It is expected that the equipment delivery size will allow access through standard double doors and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will take place after Laing O'Rourke completion during the Trust commissioning period.

## 3.6 Nuclear Medicine Department – SPECT Gamma Camera (Shell)

### 3.6.1 Rooms Affected

The scope of works below affects the following rooms:  
SPECT Gamma Camera (Shell) – U221

At the request of the Trust, this room is currently design as a shell space for future provision.

## 3.6.2 Services

### 3.6.2.1 Power

#### **Power for the equipment:**

Power for the future camera will be provided by Laing O'Rourke to an isolator within the room to the standard as per the SPECT gamma camera.

It will be the responsibility of the equipment supplier to provide the necessary MEIGaN termination box and to ensure installations comply with MEIGaN. Laing O'Rourke will provide the main earth to the agreed position for the MEIGaN earth reference bar.

#### **Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke to the requirements denoted in the equipment schedule LOR-CO-SW-SH-0039 Rev. F03. The cabling will be brought to a point just inside the room and left.

### 3.6.2.2 Room Environment

Room environmental conditions will be provided as specified by the BDP environmental matrix as reviewed and agreed with the Trust BDP-ME-SW-SH-0004 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

#### **Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L02-5502 Rev. F03. LOR will supply and install the chilled water to a point just inside the room and cap off.

#### **Ventilation:**

Fresh air and extract ventilation will be introduced to the scanner and control rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L02-5702 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to a point just inside the room and cap off.

#### **Heating:**

Heating will be achieved via the ventilation system – see note above.

**Cooling:**

The cooling will be provided by the ventilation system – see above.

**3.6.2.3 Medical Gases**

There are no medical gases supplied to the SPECT camera rooms.

**3.6.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the SPECT camera rooms.

**3.6.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the scanner control room. Cable containment will be provided from the box to the control room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. The termination points will not be installed for this room.

**3.6.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L02-5202 Rev. F02. There are currently no drainage connections shown passing through this room.

**3.6.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L02-5302 Rev. F02. LOR will supply and install the hot and cold water to a point just inside the room and cap off.

**3.6.2.8 BMS/Data**

**BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

**Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L02-6102 Rev. F02 and will be run from agreed hub room to the equipment and control rooms and left coiled up for later use. The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

#### **3.6.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

### **3.6.3 Finishes**

#### **3.6.3.1 Floor**

The floor will be dropped by 120mm compared to the adjacent floor to allow for service connection to the equipment as per the LOR dropped slab schedule LOR-CO-SW-SH-0037 Rev. F02. No other finishes will be applied to the shell space.

#### **3.6.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the SPECT camera room. Walls will be taped and jointed and sealed to manufactures requirements. Services and containment will be provided within the walls as per the agreed 1:50 layouts once they are produced.

#### **3.6.3.3 Ceiling**

Laing O'Rourke will not provide any ceiling to this room.

#### **3.6.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

#### **3.6.3.5 Decoration**

No paint finishes, other decorations or wall protection will be provided or installed by LOR.

#### **3.6.3.6 Other**



**Glazed Screens:**

All glazed screens within partitions to be supplied and installed by LOR, but see the note below on the console screen.

**Sanitaryware and FF&E:**

No sanitaryware, furniture, fixtures or equipment will be supplied by LOR.

### 3.6.4 Specialist Elements

**Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the scanner room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

**Warning Lights:**

Laing O'Rourke will install any required warning lights outside the room. Trust to confirm light specification & required method of operation.

**Control Console with Lead Screen:**

The control console and lead protective screen will be provided by the Trust. Any services required on this console will be terminated and tested in an adjacent partition for extension by the Trust.

### 3.6.5 Commissioning and Access

**Commissioning:**

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

**Access:**

It is expected that the equipment delivery size will allow access through standard double doors and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will take place after Laing O'Rourke completion during the Trust commissioning period.

## 3.7 Nuclear Medicine Department - PET Scanner

### 3.7.1 Rooms Affected

The scope of works below affects the following rooms: -  
PET scanner – U171

### **3.7.2 Services**

#### **3.7.2.1 Power**

##### **Power for the equipment:**

Power for the Camera will be provided by Laing O'Rourke to TP&N 400v 112.5kVA to an isolator within the room. Distribution to the Trust equipment including containment, cabling & commissioning will be taken from the isolator and provided by the specialist equipment supplier.

It will be the responsibility of the equipment supplier to provide the necessary MEIGaN termination box and to ensure installations comply with MEIGaN. Laing O'Rourke will provide the main earth to the agreed position for the MEIGaN earth reference bar.

##### **Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke to the requirements denoted in the equipment schedule LOR-CO-SW-SH-0039 Rev. F03.

#### **3.7.2.2 Room Environment**

##### **Room Environment:**

Room environmental conditions will be provided as specified by the BDP environmental matrix as reviewed and agreed with the Trust BDP-ME-SW-SH-0005 Rev. F02.

##### **Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L02-5502 Rev. F03. LOR will fully supply and install the chilled water to the termination points within the room.

##### **Ventilation:**

Fresh air and extract ventilation will be introduced to the scanner and control rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L02-5702 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to the termination points within the room.

##### **Heating:**

Heating will be achieved via the ventilation system – see note above.

**Cooling:**

The cooling will be provided by the ventilation system – see above.

**3.7.2.3 Medical Gases**

LOR will provide medical gases as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04 which will serve the PET scanner room with vacuum and oxygen.

LOR will install from the local AVSU to the final termination point.

**3.7.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the Cardiac camera rooms.

**3.7.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the scanner control room. Cable containment will be provided from the box to the control room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. LOR will supply and install within the trunking system the necessary call points etc. Locations are to be agreed through the 1:50 process.

**3.7.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L02-5202 Rev. F02. There is currently a foul water drainage connection shown passing through this room. We will investigate moving this connection outside the room during the next design phase.

**3.7.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L02-5302 Rev. F02. LOR will supply and install the hot and cold water to the termination points within the room.

**3.7.2.8 BMS/Data**

**BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

**Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L02-6102 Rev. F02 and will be run from agreed hub room to the equipment and control rooms and left coiled up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

**3.7.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

**3.7.3 Finishes**

**3.7.3.1 Floor**

The floor will be dropped by 120mm compared to the adjacent floor to allow for service connection to the equipment as per the LOR dropped slab schedule LOR-CO-SW-SH-0037 Rev. F02. LOR will provide and install trunking to the location provided by the Trust specialist equipment supplier.

Floor finishes, including the infill floor screed to bring the area to level will be supplied and installed by LOR with the exception of the note below.

The Trust will be required to confirm the setting out for the floor trunking & imaging table within the timescales included towards the back of this document.

The lid for the floor trunking along with a strip of vinyl will be left open for when the imaging equipment is installed. The Trust will close the lid and complete the flooring including required welding.

A concrete base will be provided for the floor mounted table base plate to manufacturer's requirements.

**3.7.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the PET scanner room. Walls will be taped and jointed and sealed to manufactures requirements. Services and containment will be provided within the walls as per the agreed 1:50 layouts once they are produced.

#### **3.7.3.3 Ceiling**

Laing O'Rourke will provide a suspended ceiling as ceiling type 7 from LOR-CO-SW-SP-0005 Rev. F01 to a height of 2700mm.

Laing O'Rourke will supply, design & install ceiling within the room. The Trust will be required to confirm the setting out and design of any support for the equipment to enable the room design to be concluded with timescale required by the programme. Support above the ceiling for the equipment will be provided by the Trust.

#### **3.7.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

#### **3.7.3.5 Decoration**

All paint finishes, other decorations and wall protection will be provided and installed by LOR.

#### **3.7.3.6 Other**

##### **Glazed Screens:**

All glazed screens within partitions to be supplied and installed by LOR, but see the note below on the console screen.

##### **Sanitaryware and FF&E:**

Break down of sanitaryware and fixtures, furniture and equipment supply is determined by the ADB grouping 1 – 4 as shown on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.7.4 Specialist Elements**

#### **Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the scanner room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

**Warning Lights:**

Laing O'Rourke will install any required warning lights outside the room. Trust to confirm light specification & required method of operation.

**Control Console with Lead Screen:**

The control console and lead protective screen will be provided by the Trust. Any services required on this console will be terminated and tested in an adjacent partition for extension by the Trust.

### 3.7.5 Commissioning and Access

**Commissioning:**

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

**Access:**

It is expected that the equipment delivery size will allow access through standard double doors and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will take place after Laing O'Rourke completion during the Trust commissioning period.

## 3.8 Imaging Department - Fluoroscopy

### 3.8.1 Rooms Affected

**The following scope of works affects the following rooms only:**

Fluoroscopy – LR013

### 3.8.2 Services

#### 3.8.2.1 Power

**Power for equipment:**

Power for the scanner will be provided by Laing O'Rourke to TP&N 400v 120kVA to an isolator within the room. Distribution to the Trust equipment including containment,

cabling & commissioning will be taken from the isolator and provided by the specialist equipment supplier.

It will be the responsibility of the specialist equipment supplier to provide the necessary MEIGaN termination box and to ensure the installations comply with MEIGaN.

### **Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke. The extent of the outlets within the room will be set by the equipment schedule LOR-CO-SW-SH0039 Rev. F3. Positions of the outlets will be agreed through the 1:50 room layout design process.

### **3.8.2.2 Room Environment**

Room environmental conditions will be provided as specified within the environmental data matrix, BDP-ME-SW-SH-0004 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

#### **Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L04-5504 Rev. F03. LOR will fully supply and install the chilled water to the termination points within the room.

#### **Ventilation:**

Fresh air and extract ventilation will be introduced to the scanner and control rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L04-5704 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to the termination points within the room.

#### **Heating:**

Heating will be achieved via the ventilation system – see note above.

#### **Cooling:**

The cooling will be provided by the ventilation system – see above.

### **3.8.2.3 Medical Gases**

LOR will provide medical gases as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04 which will serve the General Imaging rooms. LOR will install from the local AVSU to the final connection point.

#### **3.8.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the General Imaging rooms.

#### **3.8.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the scanner control room. Cable containment will be provided from the box to the control room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. LOR will supply and install within the trunking system the necessary call points etc. Locations are to be agreed through the 1:50 process.

#### **3.8.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L04-5204 Rev. F02.

#### **3.8.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L04-5304 Rev. F02. LOR will supply and install the hot and cold water to the termination points within the room.

#### **3.8.2.8 BMS/Data**

##### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

##### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L04-6104 Rev. F02 and will be run from **agreed hub room** to the equipment and control rooms and left coiled



up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.8.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.8.3 Finishes**

### **3.8.3.1 Floor**

The floor will be dropped by 100mm compared to the adjacent floor to allow for service connection to the equipment. LOR will provide and install trunking to the location provided by the Trust specialist equipment supplier.

Floor finishes, including the infill floor screed to bring the area to level will be supplied and installed by LOR.

The lid for the floor trunking along with a strip of vinyl will be left open for when the imaging equipment is installed. The Trust will close the lid and complete the flooring including required welding.

### **3.8.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the Fluoroscopy rooms. Walls will be taped and jointed and sealed to manufactures requirements. Services and containment will be provided within the walls as per the agreed 1:50 layouts once they are produced.

### **3.8.3.3 Ceiling**

Laing O'Rourke will provide a suspended ceiling as ceiling type 7 from LOR-CO-SW-SP-0005 Rev. F01 to a minimum clearance height of 2740mm as noted in MTS-HP-ST1-SH-0100.

Laing O'Rourke will supply, design & install ceiling within the room. The Trust will be required to confirm the setting out and design of the support for the equipment to enable the room design to be concluded with timescale required by the programme. Support above the ceiling for the equipment will be provided by the Trust.

### **3.8.3.4 Doors**

Brighton & Sussex University Hospitals  
Regional Centre for Teaching, Trauma & Tertiary Care

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

#### **3.8.3.5 Decoration**

All paint finishes, other decorations and wall protection will be provided and installed by LOR.

#### **3.8.3.6 Other**

Break down of equipment supply is determined by the ADB grouping 1 – 4 as shown on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.8.4 Specialist Elements**

#### **Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the General Imaging room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

#### **Warning Lights:**

No warning lights are currently incorporated into the equipment schedule and are excluded.

The PSCP will install final wire and connect up all lighting to the imaging equipment as per the specialist equipment supplier drawings and details.

#### **Control Console with Lead Screen:**

The control console and lead screen will be supplied and installed by the Trust as per the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.8.5 Commissioning and Access**

#### **Commissioning:**

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

#### **Access:**

It is expected that the equipment delivery size will allow access through standard leaf and a half door arrangement and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will occur after Laing O'Rourke completion during the Trust commissioning period.

### **3.9 Hot Imaging/Recovery/Neuro Theatre floor - Angiography**

#### **3.9.1 Rooms Affected**

**The following scope of works affects the following rooms only:**

Neuro IR Theatre – U117

Endovascular IR theatre – U087

Interventional Radiography Theatre – U118

Polytrauma theatre – U149

#### **3.9.2 Services**

##### **3.9.2.1 Power**

###### **Power for equipment:**

Power for the scanner will be provided by Laing O'Rourke to TP&N 400v 180 kVA to an isolator within the room. Distribution to the Trust equipment including containment, cabling & commissioning will be taken from the isolator and provided by the specialist equipment supplier.

It will be the responsibility of the specialist equipment supplier to provide the necessary MEIGaN termination box and to ensure the installations comply with MEIGaN.

###### **Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke. The extent of the outlets within the room will be set by the equipment schedule LOR-CO-SW-SH0039 Rev. F3. Positions of the outlets will be agreed through the 1:50 room layout design process.

###### **IPS**

IPS supply will be provided by LOR for the Angiography machines.

##### **3.9.2.2 Room Environment**

###### **Room Environment:**

Room environmental conditions will be provided as specified within the environmental data matrix, BDP-ME-SW-SH-0005 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

**Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST1-A00-GA-L05-5505 Rev. F03. Chilled water is not supplied to the rooms referenced above.

**Ventilation:**

Fresh air and extract ventilation will be introduced to the theatre rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L05-5705 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to the termination points within the room.

**Heating:**

Heating will be achieved via the ventilation system – see note above.

**Cooling:**

The cooling will be provided by the ventilation system – see above.

**3.9.2.3 Medical Gases**

LOR will provide medical gases as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04 which will serve the rooms noted above. LOR will install from the local AVSU to the final connection point on the pendants (see 3.12)

**3.9.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the rooms noted above.

**3.9.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the various rooms. Cable containment will be provided from the box to the termination points by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. LOR will supply and install within the trunking system the necessary call points etc. Locations are to be agreed through the 1:50 process.

### **3.9.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST1-A00-GA-L05-5205 Rev. F02. There are currently no drainage connections shown passing through the rooms noted.

### **3.9.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST1-A00-GA-L02-5305 Rev. F02. LOR will supply and install the hot and cold water to the termination points within the room – though these are restricted to the scrub/preparation rooms.

### **3.9.2.8 BMS/Data**

#### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

#### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST1-A00-GA-L05-6105 Rev. F02 and will be run from **agreed hub room** to the rooms noted above. LOR will install from the hub room termination points (pendants/theatre panels). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.9.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.9.3 Finishes**

### **3.9.3.1 Floor**

The floor will be dropped by 100mm compared to the adjacent floor to allow for service connection to the equipment. LOR will provide and install trunking to the location provided by the Trust specialist equipment supplier.

Floor finishes, including the infill floor screed to bring the area to level will be supplied and installed by LOR.

### **3.9.3.2 Wall**

Laing O'Rourke will construct studwork (or similar) partitions to all walls making up the rooms noted above. Walls will be taped and jointed and sealed to manufactures requirements. Services and containment will be provided within the walls as per the agreed 1:50 layouts once they are produced.

### **3.9.3.3 Ceiling**

Laing O'Rourke will provide a suspended ceiling as ceiling type 8 from LOR-CO-SW-SP-0005 Rev. F01 to a minimum clearance height of 2840mm as noted in MTS-HP-ST1-SH-0100.

Laing O'Rourke will supply, design & install a standard hanger supported ceiling. The Trust will be required to confirm the setting out of the support required and install the support prior to the installation of the ceilings.

### **3.9.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. Allowance has been made for the inclusion of vision panels.

### **3.9.3.5 Decoration**

All paint finishes, other decorations and wall protection will be provided and installed by LOR.

### **3.9.3.6 Other**

Break down of equipment supply is determined by the ADB grouping 1 – 4 as shown on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

## **3.9.4 Specialist Elements**

### **Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for code 4 lead to all walls to the General Imaging room as per the K10 specification LOR-CO-SW-SP-0004 Rev. F02.

**Warning Lights:**

No warning lights are identified on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

The Trust equipment supplier will install final wire and connect up all lighting to the imaging equipment as per the specialist equipment supplier drawings and details.

**Pendants, operating theatre lights, operating theatre hoods and theatre panels**

The above equipment is all supplied as per the equipment schedule LOR-CO-SW-SH0039 Rev. F3. For further information on the elements proposed see items 3.12 to 3.17.

### 3.9.5 Commissioning and Access

**Commissioning:**

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

**Access:**

It is expected that the equipment delivery size will allow access through standard double door arrangement and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will occur after Laing O'Rourke completion during the Trust commissioning period.

## 3.10 Radiotherapy Department - LINAC

### 3.10.1 Rooms Affected

The following scope of works affects the rooms:

- Linear accelerator high energy – LR080
- Linear accelerator medium energy – LR081
- Control Room – LR082

The above rooms will be left as a "Shell Space" by Laing O'Rourke for fit out by the LINAC equipment supplier.

The works to be included as part of Laing O'Rourke works are listed below:

### 3.10.2 Services

#### 3.10.2.1 Power

**Power for equipment:**

1 No. power supply as noted on the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01 will be provided by Laing O'Rourke to an isolator within the control room.

All distribution including cabling, containment & final fittings within all the above rooms is by the LINAC fit out contractor.

It will be the responsibility of the LINAC fit out contractor to provide the necessary MEIGaN termination box and to ensure installations comply with MEIGaN.

**Small Power & Lighting:**

LOR will install the cabling and distribution as shown on BDP-EL-ST2-A00-GA-L01-6101 Rev. F03. Trust turnkey supplier will run circuits from the cabling and distribution in the corridors to provide lighting and small power outlets within the LINAC rooms. Note all sockets are to be provided through surface mounted dado trunking (Supplied and installed by the Trust turnkey supplier).

**UPS/IPS**

Not supplied for this equipment.

**3.10.2.2 Room Environment**

Room environmental conditions will be provided as specified within the environmental data matrix, BDP-ME-SW-SH-0004 Rev. F02 and the major clinical equipment schedule BDP-ME-SW-SH-0007 Rev. F01.

**Chilled Water**

Chilled water will be as denoted on the drawing reference BDP-ME-ST2-A00-GA-L01-5501 Rev. F04. LOR will install the chilled water and cap off directly outside the Linac bunker. The Trust turnkey supplier will complete all aspects of the installation from the cap off location.

**Heating**

Heating will be employed to meet the temperature requirements as indicated in the environmental data matrix, BDP-ME-SW-SH-0004 Rev. F02.

**Ventilation:**

Heating & ventilation ductwork will be provided to a single point outside the LINAC rooms. All distribution including ductwork, grilles, controls, final connections will be carried out by the LINAC fit out contractor. The design of the ventilation within the room is to be



concluded by the Trust turnkey supplier to ensure compliance with the environmental data matrix as referenced above.

### **3.10.2.3 Medical Gases**

LOR will provide medical gases to the nearest AVSU as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04. Trust turnkey supplier will run medical gases from the local AVSU including final connections and all necessary testing & commissioning thereof.

### **3.10.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. Trust turnkey supplier will install the fire alarm system from the network interface box to the equipment and control room.

### **3.10.2.5 Nurse call**

#### **Nurse call**

A nurse call network cable will be provided to the external walls of the MRI suite coiled up to allow for final distribution and installation of termination points by the Trust turnkey supplier.

#### **Crash team call system**

As above.

### **3.10.2.6 Drainage**

The drainage design is denoted within the sanitation and public health drawing BDP-PH-ST2-A00-GA-L01-5201 Rev. F02. There is currently no drainage shown within the Linac room itself, however, there is drainage within the Linac control room at high level.

Condensate Drains: Condensate drains will be run to drain connections to the drainage system. Trust turnkey supplier is required to advise where they require drains for condensate from the equipment.

### **3.10.2.7 Hot and cold water service**

Hot, cold & chilled water will be brought to and capped off at an agreed point. All distribution including final connections will be carried out by the LINAC fit out contractor. The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST2-A00-GA-L01-5301 Rev. F02.

### **3.10.2.8 BMS/Data**

#### **BMS**

A room temperature/humidity sensor will be provided to the control room by LOR.  
Averaging sensors will be considered.

#### **Data:**

Data cabling (Cat 6e) will be provided from an **agreed hub room** to the control rooms and left coiled up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.10.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.10.3 Finishes**

### **3.10.3.1 Floor**

Laing O'Rourke will provide a 100mm recess in the floor construction of the LINAC room only to allow equipment to be installed. The floor slab will be left as a structural slab and tolerances will be in line with British Standard.

In all the rooms above floor finishes will be installed by the Trust LINAC fit out contractor.

### **3.10.3.2 Wall**

See note regarding specialist wall protection below. All other walls related to this element will be constructed as drylined partition walls as per the LOR partition drawings.

### **3.10.3.3 Ceiling**

No ceilings will be installed by LOR.

The Trust LINAC contractor will install all required services and complete the ceiling including all finishes, M&E fittings etc.

### **3.10.3.4 Doors**

There are no doors to the Linac bunkers as the design has utilised the maze approach.  
Doors to the Control Rooms will be supplied by Laing O'Rourke.

### **3.10.3.5 Decoration**

Decoration to the LINAC rooms is by the Trust. Decoration to the control room is by LOR.

### **3.10.3.6 Other**

#### **Glazed Screens:**

All glazed screens within partitions to be supplied and installed by the Trust's turnkey provider. Building works to be made known to the PSCP.

#### **Sanitaryware and FF&E:**

All sanitaryware and FFE within the rooms noted is supply and install by the Trust's turnkey provider.

## **3.10.4 Specialist Elements**

### **Specialist Wall Protection:**

The walls to the Linac bunkers are currently designed as precast concrete wall units with concrete infill to the widths agreed with the Trust Radiation Protection Advisor as per the LOR document LOR-CO-ST2-SK-000 Rev. F01.

Any additional steel shielding required to floors walls or ceilings will be designed, supplied and installed by the Trust LINAC fit out contractor and is specifically excluded from the LOR offer.

### **Warning Lights:**

Warning lights for the LINAC room will be provided by the LINAC fit out contractor.

## **3.10.5 Commissioning and Access**

### **Commissioning:**

Laing O'Rourke will commission all services up to where they are capped for extension by the LINAC fit out contractor. The LINAC contractor will be responsible for commissioning all services within the LINAC Suite.

It is anticipated that any works carried out by the LINAC fit out contractor will take place in the Trust commissioning period and after Laing O'Rourke completion.

### **Access:**

The Trust LINAC contractor will allow for the delivery, installation & all necessary temporary works / access equipment associated with getting the equipment through the building as currently designed.

### **3.11 Radiotherapy department - Brachytherapy**

#### **3.11.1 Rooms Affected**

**The following scope of works affects the following rooms only:**

Brachytherapy treatment room – U017

#### **3.11.2 Services**

##### **3.11.2.1 Power**

###### **Power for equipment:**

Power for the HDR afterloader will be provided by Laing O'Rourke to an isolator within the room. Distribution to the Trust equipment including containment, cabling & commissioning will be taken from the isolator and provided by the specialist equipment supplier.

It will be the responsibility of the specialist equipment supplier to provide the necessary MEIGaN termination box and to ensure the installations comply with MEIGaN.

###### **Small power and lighting**

General small power & lighting required in the room will be provided by Laing O'Rourke. The extent of the outlets within the room will be set by the equipment schedule LOR-CO-SW-SH0039 Rev. F3. Positions of the outlets will be agreed through the 1:50 room layout design process.

##### **3.11.2.2 Room Environment**

###### **Room Environment:**

Room environmental conditions will be provided as specified within the environmental data matrix, BDP-ME-SW-SH-0005 Rev. F02.

###### **Chilled Water:**

Chilled water will be as denoted on the drawing reference BDP-ME-ST2-A00-GA-L01-5501 Rev. F04. LOR will fully supply and install the chilled water to the termination points within the room.

###### **Ventilation:**

Fresh air and extract ventilation will be introduced to the rooms from the ductwork distribution systems as indicated on the ventilation drawings BDP-ME-ST1-A00-GA-L04-5704 Rev. F03. The air change rate is as specified on the BDP environmental data matrix as noted above.

LOR will supply and install the ventilation to the termination points within the room.

**Heating:**

Heating will be achieved via the ventilation system – see note above.

**Cooling:**

The cooling will be provided by the ventilation system – see above.

**3.11.2.3 Medical Gases**

LOR will provide medical gases as indicated on the signed off document BDP-ME-SW-SOW-0003 Rev. F04 which will serve the Brachytherapy treatment rooms. LOR will install from the local AVSU to the final connection point.

**3.11.2.4 Fire Alarm**

A new fire alarm loop will be provided as denoted in the fire alarm system scope document BDP-EL-SW-SOW-0004 Rev. F02. The system will provide for a connection from the existing fire alarm control panel to an interface box to be provided within the control room. LOR will install the fire alarm system from the network interface box to the final termination points within the General Imaging rooms.

**3.11.2.5 Nurse call**

A new nurse call network system will be provided by LOR, located within the ceiling void externally adjacent to the rooms. Cable containment will be provided from the box to the room by LOR.

In relation to call points, these are derived from the equipment schedule LOR-CO-SW-SH0039 Rev. F3. LOR will supply and install within the trunking system the necessary call points etc. Locations are to be agreed through the 1:50 process.

**3.11.2.6 Drainage**

LOR will install the drainage as indicated on the drawing BDP-PH-ST2-A00-GA-L01-5201 Rev. F02. There is a drainage run passing through the Brachytherapy treatment room. During the next design, we will review this drainage run.

### **3.11.2.7 Hot and cold water service**

The hot and cold water service will be supplied as per the drawing reference BDP-ME-ST2-A00-GA-L01-5301 Rev. F02. LOR will supply and install the hot and cold water to the termination points within the room.

### **3.11.2.8 BMS/Data**

#### **BMS:**

BMS will be supplied as per the principles outlined in BDP-ME-EL-SOW-0008 Rev. F01 as approved by the Trust. The detailed room by room requirements will be developed further through the design process.

#### **Data:**

Data cabling (Cat 6e) will be provided as per BDP-EL-ST2-A00-GA-L01-6101 Rev. F02 and will be run from **agreed hub room** to the equipment and control rooms and left coiled up for Trust turnkey supplier to run to outlet points (Surface mounted dado trunking). The number of points is as per the Equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.11.2.9 Access Control CCTV**

No access control is provided to the scanner room as the room is contained within a controlled zone.

No CCTV is provided as per the security scope of works in document BDP-EL-SW-SOW-0005 Rev. F02.

## **3.11.3 Finishes**

### **3.11.3.1 Floor**

There is no dropped slab currently incorporated for any rooms associated with Brachytherapy.

Floor finishes, including the floor screed to bring the area to level will be supplied and installed by LOR.

### **3.11.3.2 Wall**

The walls are currently designed as a 400mm thick wall. The finish on the wall will be a painted concrete finish.

### **3.11.3.3 Ceiling**

Laing O'Rourke will provide a suspended ceiling as ceiling type 7 from LOR-CO-SW-SP-0005 Rev. F01 to a minimum clearance height of 2700mm.

Laing O'Rourke will supply, design & install a ceiling supported on hangers. The Trust will be required to confirm the setting out of any ceiling supportwork required for the Trust supplied equipment to meet the overall construction programme.

#### **3.11.3.4 Doors**

All doors will be supplied and installed by LOR. Doorsets will be supplied and installed as laminate faced with timber edge lippings complete with code 5 lead protection (SC check) in accordance with the specification LOR-CO-SW-SP-0003 Rev. F02. No allowance has been made for the inclusion of vision panels.

#### **3.11.3.5 Decoration**

All paint finishes, other decorations and wall protection will be provided and installed by LOR.

#### **3.11.3.6 Other**

##### **Sundry equipment:**

The two items denoted as follows: -

POS9531 - APPLICATORS STORAGE, brachytherapy

XBR9001 - Secure Area For Brachytherapy Source, Brachytherapy Theatre

will be supplied and installed by the Trust despite the reference on the equipment schedule LOR-CO-SW-SH0039 Rev. F3 indicating a group 1 item. This was incorrectly included and should be a specialist supply.

Break down of equipment supply is determined by the ADB grouping 1 – 4 as shown on the equipment schedule LOR-CO-SW-SH0039 Rev. F3.

### **3.11.4 Specialist Elements**

#### **Specialist Wall Protection:**

X-Ray protection will be provided to this room by Laing O'Rourke. The current inclusion is for 400mm thick concrete walls to the Brachytherapy treatment room, Orthovoltage, Radioactive store as per the 1:200 signed off drawings BDP-AR-ST2-A00-GA-L01-0001 Rev. F17..

#### **Warning Lights:**

Laing O'Rourke will install LIG9370 Integrated Radiation Warning Signs as denoted within the equipment schedule LOR-CO-SW-SH0039 Rev F03.]

### **3.11.5 Commissioning and Access**

**Commissioning:**

Any required re-commissioning works required after the Trust has installed their equipment will be carried out by the Trust.

**Access:**

It is expected that the equipment delivery size will allow access through standard leaf and a half door arrangement and the layout indicated on the signed off 1:200 layout BDP-AR-ST2-A00-L01-0001 Rev. F017 and therefore it is assumed that no special access is required to allow the equipment to be installed.

Installation will occur after Laing O'Rourke completion during the Trust commissioning period.

### **3.12 Pendants**

All pendants are supplied by LOR via Cht and will be governed by the high level principles contained within the equipment schedule LOR-CO-SW-SH0039 Rev. F3 and further developed by CHt during the market testing process.

The GMP is based upon the product noted within the CHt contractor's proposals. However, as identified in the RDD schedule, LOR-CO-SW-SH-0029 Rev. F09 the Trust has opportunity to adjust the detailed specification and supplier during phase 4 within the defined budget.

### **3.13 Theatre Panels**

All theatre panels are supplied by LOR via Cht and will be governed by the high level principles contained within the equipment schedule LOR-CO-SW-SH0039 Rev. F3 and further developed by CHt during the market testing process.

The GMP is based upon the product noted within the CHt contractor's proposals. However, as identified in the RDD schedule, LOR-CO-SW-SH-0029 Rev. F09 the Trust has opportunity to adjust the detailed specification and supplier during phase 4 within the defined budget.

### **3.14 Examination lights**

All examination lights are supplied by LOR via Cht and will be governed by the high level principles contained within the equipment schedule LOR-CO-SW-SH0039 Rev. F3 and further developed by CHt during the market testing process.



The GMP is based upon the product noted within the CHt contractor's proposals.

However, as identified in the RDD schedule, LOR-CO-SW-SH-0029 Rev. F09 the Trust has opportunity to adjust the detailed specification and supplier during phase 4 within the defined budget.

### **3.15 Theatre lights**

All theatre lights are supplied by LOR via Cht and will be governed by the high level principles contained within the equipment schedule LOR-CO-SW-SH0039 Rev. F3 and further developed by CHt during the market testing process.

The GMP is based upon the product noted within the CHt contractor's proposals.

However, as identified in the RDD schedule, LOR-CO-SW-SH-0029 Rev. F09 the Trust has opportunity to adjust the detailed specification and supplier during phase 4 within the defined budget.

### **3.16 Theatre extract hoods**

All theatre extract hoods are supplied by LOR via Cht and will be governed by the high level principles contained within the equipment schedule LOR-CO-SW-SH0039 Rev. F3 and further developed by CHt during the market testing process.

The GMP is based upon the product noted within the CHt contractor's proposals.

However, as identified in the RDD schedule, LOR-CO-SW-SH-0029 Rev. F09 the Trust has opportunity to adjust the detailed specification and supplier during phase 4 within the defined budget.

### **3.17 Fume Cupboards**

Within the equipment schedule LOR-CO-SW-SH0039 Rev. F3, the fume cupboards are identified as a Group 1 item. However, during the market testing phase, the supply chain has indicated that owing to the specialist nature of these elements, they should be supplied by the Trust.

LOR has included for all extract ductwork and fans away from the fume cupboard and the power supply. LOR has currently excluded from the GMP the cost of providing fume cupboards themselves.

### **3.18 All other equipment noted on MTS-HP-SH0101**

The schedule referenced above highlights some of the equipment with a more specialised servicing or building design impact. The schedule indicates potential equipment

manufacturers and types and lists "exemplar" requirements in terms of building and servicing requirements. It should be noted that the following elements have not yet been fully tested due to the stand down of the design team: -

- Minimum doorway requirements
- Minimum ceiling clearance
- System ceiling mounting requirements
- Floor recess requirements (the dropped slab schedule LOR-CO-SW-SH-0037 Rev. F01)
- Equipment weight (standard loads have been assumed – see the WSP loading drawings WSP-ST-ST1-SK-0053 to SK-0067 and WSP-ST-ST2-SK-0052 to SK-0060)
- Heat gain – allowances for equipment load heat gain have been assumed and included within the thermal model for all equipment.

The following elements have been included within the CHt allowance: -

- Electrical supply
- Exhaust extract
- Water
- Other services
- Temperature
- Humidity