SPECIFICATION Retro PCR and PCR laboratories.

Introduction:

The MHRA have identified that the PCR and Retro PCR control panels are to be replaced. This will include both suites split over two financial years, with the Retro PCR being completed first. The lab rooms will be refurbished to suit the new layout, including all air handling, ductwork, controls, and interfaces.

The Retro PCR Lab ventilation Air handling unit (HVAC 1/S/33) is controlled to provide a positive and negative (PCR) pressure control regime for labs 3087, 3088,3089 & 3090 and is highly dependent on its respective control panel integrity. In addition, the retro suite has its own ventilation system AHU 1/S/32 to provide a negative pressure regime for labs 3097,3098, 3101,3103,3108 & 3114.

The Walkers control panel that serves labs 3097,3098, 3101,3103,3108 & 3114 will be replaced in the second phase of works (2023) along with the PCR suite of labs.

For all areas the existing control panels were installed by Walkers ltd and are of a bespoke nature with an ad-hock build, this has led overtime to these panels being fraught with issues, unfortunately over the years the panel has suffered constant failures at component level and subsequent remedial works that have gone unrecorded, with the control schematic drawings not being accurate anymore lending this type of panel to be unsafe to work within and with most of the components being obsolete, the labs/suites are unsafe to use. It is therefore imperative these control panels are replaced.
The Retro PCR will also be refurbished within the lab to accommodate the new system and controls. The layouts and requirements are listed further in this document. This will be carried out this financial year, with the PCR suite planned for next year (2023). This will include but not be limited to, new air handling, new walls, benching, doors, finishes, data, power and Trend sensors.

You are to provide a cost for both areas, with the inflationary, or material increase for the PCR in 2023

The control panels and HVAC plant are located within the South upper plantroom.

Those contractors that are selected to tender will be asked to show examples of their works on similar related projects that they have previously undertaken and is to include a site visit by key members of the South Mimms project team.

H&S CDM works information

This project will require CDM regulations.
CDM Pre-construction & H&S Information will be provided by South Mimms CDM Advisor Simon Rigers.

Project Description

Phase 1, 2022.
The project comprises of complete replacement of the HVAC, control panel and the refurbishment of the Retro PCR, Virology lab space.

Phase 2, 2023.
Complete replacement of the HVAC, control panel and the refurbishment of the PCR lab space.
The Walkers control panel that serves labs 3097,3098, 3101,3103,3108 & 3114 will be replaced

The proposed plan layouts are included within this tender package.

Noise, dust, vibration

Due to the nature of the building, it is essential that full consultation with The Employer is carried out prior to a detailed forward planning schedule being drawn up. There are "special requirements" in some areas of the Institute.

Reduce airborne dust by periodically spraying deconstruction/ demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris. Lead dust - Submit method statement for control, containment and clean-up regimes.

Precautions - Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works.

Permit to Work

The Employer operates a permit to work system these include the following as required by the work: -

- Decontamination certificate.
- General Permit to work
- Fire Isolation
- Electrical Isolation
- Hot Work

All permits will be issued as necessary by authorised staff. No work is to commence without the possession of the relevant permit to work. These must be returned to the issuer on completion of the works for filing.

There are no health risks to contractors' personnel from the Employers activities as long as the Employers controls are complied with fully.

The Employer will continue to operate normally in the building. However, it may be necessary for some operational areas to be vacated for periods of time to allow works to be carried out. The Principal Contractor will be required to liaise with the Employer so that a programme can be established to suit operational requirements. Access to all areas for Employer's maintenance personnel must be maintained at all times unless alternative arrangements have been made with the client.

The Principal Contractor must ensure that his operations do not pose any risk to the Employers personnel or visitors to the Institute.

Programme of works

Please supply a Gantt Chart Schedule in your tender return. This should show all lead times. It is preferable that this is supplied in Microsoft Project but an excel spreadsheet would be accepted.

Design Change Post Contract Award

Any change to this specification after the tender has been received and the contract awarded will be controlled using the South Mimms Design Change form that is signed by both the Institute's project leader and the contractor's representative. The form will identify the change and its effect on costs and timescales.

Site Access

The logistical flow of Lorries and large vehicles must be managed to prevent heavy vehicle congestion on site. All works that may have indirect or direct impact on staff welfare must be carried out of hours.

Mon- Fri	06:00 to 8:30
	17:15 to 20:00
Sat & Sun	With the permission of the Project Engineer

Access to the site will be via the main access to South Mimms, which is shared with the client's employees, and visitors. All vehicles will be stopped at the security cabin and all drivers will be required to comply with the client's security arrangements.

After 6pm no work can take place unless security and PE have agreed to this.

House Keeping

Due to the clean environment required for the work of the institute, good housekeeping is required at all times. All waste material must be removed from site on a daily basis and storage for materials on site is not available. Any skips required must be provided by the contractor and positioned in a location agreed with the Project Engineer.

Confidentiality

Contractors are expected to keep any information about the work of the Institute or staff details totally confidential at all times.

Isolations

Electrical Isolations will be carried out in accordance with the Employers SOP no 6373, see attached document. The Employer will isolate all services as necessary; permits will be issued to cover all the scope of works.

Mechanical isolations - The Employer will isolate all services as necessary some such as Steam isolations would require chaining off so it cannot be de-isolated; permits will be issued to cover all the scope of works.

Location

Blanche Lane, South Mimms, Potters Bar, Hertfordshire EN6 3QG, UK. Ordnance Survey reference TL217003

Although not far from the M25-A1(M) South Mimms interchange, the site is in a substantially rural setting on a relatively steep slope facing South South East. There is a conservation area to the North and the natural topography drains down the fall slope to

watercourses beyond the southern lower boundary. The site of approximately 13 acres (5.3 hectares) has been terraced to provide level building platforms.

Site

The site for the works is the existing Retro PCR & PCR department at South Mimms, located in the South lower building and the South upper plantroom.

Access to the plantroom will be via the store's courtyard, through a designated corridor and up the integral stairs to the plantroom. Heavy items of materials can be brought up to the floor via the lift but this must be with the approval of the Project Manager.

Survey site setup Information

A full survey is to be undertaken to establish and verify actual site dimensions, prior to further design work and the subsequent construction phase.

The contractor is to allow for container storage or any site setup. Toilets, catering facilities, power and water can be provided with the Project Engineers permission.

Strip out

The old panel, air handling units, ductwork and builders waste will need to be disposed of "Contractors engaging in refurbishment or new works on MHRA sites are required by law to control their waste arising's. If waste skips are being brought onsite these should, where possible, be controlled by the site service provider; ensuring that a 'duty of care' is maintained. **If a contractor brings his own skip onsite they should provide details and waste licenses/permits of the waste contractor and site where the waste will be disposed of as described above."**

Demolition Works

It is anticipated that there will be removal of doors, internal stud walling and ceilings. None of these are load bearing.

New Walls and Ceiling

The new wall covering will consist of:

Sheets of 18 mm WBP plywood fixed to either a wood or proprietary metal suspension system. The edges of the plywood will be butted together at the frame centre and then sealed with joint filler. All screw holes will be sealed with joint filler.

On top of the plywood will be fixed two layers of 12.5 mm plasterboard. The joints must be offset from the joints of the other plasterboard/plywood, and all edges are to be butted together with joint filler. All screw holes and joints will be sealed with joint filler.

All plasterboard joints are to be taped and jointed.

Within the YELLOW lab, there is to be built a dwarf wall. Approx. 1800mm long, with the height to be above bench and trunking. The top of the wall in to be capped in Trespa.

In the Blue lab between the two MSC's will be built a stud wall full height and approximately 1450mm long. Within this wall is to be fitted a window, approximately 1000mm x 1000mm starting about the same level as the opening on the MSC's.

Window:

A new double-glazed window is to be formed on the left-hand side of the lobby of the main Yellow lab. This is so staff can see into the lab. Approx. size 600mm square.

Finishes

Finishes should be impervious and appropriate to a CL2 environment, i.e., to prevent bacterial growth and aid washing and disinfecting. Altro 2mm vinyl will be used on the floor and have a welded joint between sheets.
Decoration and painting of the walls are to be in (Dulux diamond white eggshell), with a minimum of two coats to achieve satisfactory coverage.

Vinyl: Colour GREY.
All lab floors will be of the same product.
Floor: 2 mm Polyvinyl flooring **(GREY)** with hospital coving some 100mm up each wall using minimum 40 mm radius supporting infill. All joints are to be welded and sealed. This will include and not be limited to, self-leveling screed, making good.

Penetrations

It is imperative that penetrations of the room fabric for fixings, services etc. are kept to an absolute minimum to provide containment of pathogens. Of particular importance are fixings for proprietary dado trunking and shelf support structure, where all fixings should be sealed.
All electrical sockets will be run in surface mounted dado trunking – Marco Elite 60 Trunking System.
All supply ductwork is to be extended to meet the new wall and ceiling surface, fully sealed and tested prior to mounting surface mount grilles.

Doors: Locks

Two new leaf and a halve doors will need to be installed in the blue, yellow and green labs. These will be half hour fire rated with vision panels, door furniture including handles and auto closure.
In the Red lab a 1000mm wide single doors will also need to be installed as per the drawing layout. These will be half hour fire rated with vision panels, door furniture including handles and auto closure. Door stops with rubber buffers. **All** locks will be from the ASSA range and suited.
New security press button locks must be installed on the Blue and Red external doors. These can be shown on site during the site visit.

Pass through hatch between Green and Yellow, Yellow and Red

New double opening Pass-Through Chambers. The hatch is to be a fully sealed unit in a stainless-steel construction with see through doors and easy-clean surfaces. The locking handle must be a secure cam lever style (Walkers or PSB) are our trusted supplier.

Size approx. 500mm wide x 500mm high x 500mm deep. Height FFL TBA but will be above bench and trunking.

Microbiological Safety Cabinet. Class 2 Recirculating.

Please provide two class 2 recirculating safety cabinets within the Blue lab as per drawing layout.

All cabinets supplied shall comply fully or exceed the requirements of British Standard BS EN 12469:2000 Biotechnology – Performance criteria for microbiological safety cabinets.

UPS: Both MSC's

A UPS is to be provided for the MSC cabinet. The UPS's must last a minimum of 30 minutes in case there is a power outage.
Class 2 cabinets

General construction

Minimum internal working width (mm)	1290
Minimum internal working height (mm)	700
Minimum internal working depth (mm)	610
Minimum aperture width (mm)	1200
Minimum aperture height (mm)	200
Working level (mm)	830

All external surfaces to be constructed from1.5mm thick mild steel epoxy powder coated 100micron thick.

The internal worktop should be constructed from 1.5mm thick 316 grade stainless steel with 1.5mm thick 304 grade inner lining.

The viewing window frame of the cabinet shall be manufactured from epoxy power coated aluminium and shall be hinged from the top lifting upward upon gas struts. The working aperture shall be provided with an aluminium light weight night door and a separate 100% sealed night door for fumigation.

Each cabinet shall be supplied on its own mild steel frame epoxy powder coated 100 micron thick and shall have adjustable feet for site levelling. The operational height of the MSC opening is 750mm FFL. This measurement will need to be double checked prior to the frame build.

Operational items

Within each cabinet an allowance shall be made to supply 1No. UK standard 13amp single socket outlet to be IP56 rated from the MK Masterseal range or other similar approved. The socket shall be separately switched from the control panel on the face of the cabinet. With the tender return a price shall be provided for additional sockets outlets if required.

Lighting within the cabinet shall be accessible for maintenance and replacement without the need to enter the working chamber of the cabinet and provide 750 lux at work top level. All lighting will be LED high efficiency, low wattage.

Each cabinet shall have a key operated control system and shall provide the following information.

- Power on
- Air inflow safe

- Air inflow unsafe (with audible alarm)
- Door open

The control panel shall also have the following control button complete with LED indicators.

- Socket on
- Cabinet on
- Lights on
- Alarm mute (LED not required)

The recirculating power must be 130 watts or greater.

In addition to the control panel, the cabinet shall have an analogue needle gauge that indicates safe and unsafe working conditions.

Commissioning should involve the relevant velocity checks and an operator protection factor (OPF) test. All tests should be carried out to take into account the worst-case scenario for containment with all cabinets, centrifuges, air conditioning units running, and any other relevant factors taken into consideration. Tests certificates should be issued on the day of the test.

Test certificates are to be provided for the new MSC's.

Please provide independent warranty assurance for these cabinets.

Benching: Cupboards and Drawers.

Generally, cantilever bench framing (epoxy-coated steel; RAL colour Black, 30% gloss) with solid grade laminate work surfaces (Trespa 'Athlon' colour Sand) to peninsular or wall benching arrangements as indicated on layout. Please see drawing. All exposed edges radiused (40mm) as crescent profile.

Bench height will be 950mm FFL (See drawing). Please check that bench legs do not impede where the under-bench freezers, staff feet or the cupboard units go.

Red lab: Width-Depth-Height
1 x 800mm x 600mm 3 drawers under bench unit. All units are to have lockable rubber castors. All units in sand colour to match benching.

1 x 500mm x 500mm top drawer with cupboard underneath + internal adjustable shelf unit. This will slide under the epoxy sink drainer. All units are to have lockable rubber castors. All units in sand colour to match benching.

Trespa shelving as per room layout approx. 300mm deep. Shelving will be fitted to adjustable spur rails and brackets. 2 tiers on each section. Where there are exposed corners, these are to be have a 40mm radius put on them. Colour sand.

Yellow lab: Width-Depth-Height
1 x 800mm x 600mm 3 drawers under bench unit. All units are to have lockable rubber castors. All units in sand colour to match benching.

1 x 500mm x 500mm top drawer with cupboard underneath + internal adjustable shelf unit. This will slide under the epoxy sink drainer. All units are to have lockable rubber castors. All units in sand colour to match benching.

1 x cupboard 1200 x 600 x 2000mm with 4 internal adjustable shelves. All units in sand colour to match benching.

Trespa shelving as per room layout approx. 300mm deep. Shelving will be fitted to adjustable spur rails and brackets. 2 tiers on each section. Where there are exposed corners, these are to be have a 40mm radius put on them. Colour sand.

Green lab: Width-Depth-Height
1 x 1000mm x 600mm 4 drawers under bench unit. All units are to have lockable rubber castors. All units in sand colour to match benching.

Trespa shelving as per room layout. Shelving will be fitted to adjustable spur rails and brackets. 4 tiers on each section. Where there are exposed corners, these are to be have a 40mm radius put on them. Colour sand.

Blue lab: Width-Depth-Height
2 x 800mm x 600mm 3 drawers under bench unit. All units are to have lockable rubber castors. All units in sand colour to match benching.

1 x 500mm x 500mm top drawer with cupboard underneath + internal adjustable shelf unit. This will slide under the epoxy sink drainer. All units are to have lockable rubber castors. All units in sand colour to match benching.

1 x movable island trolley, 1200mm x 800mm, x 950 H. 40mm radius corners without upstand. The trolley frame is to be fixed in the middle off of the 'A' frame so staff could sit either side. All units are to have lockable rubber castors. All units in sand colour to match benching.

1 x cupboard 1200 x 600 x 2000mm with 4 internal adjustable shelves. All units in sand colour to match benching.

Trespa shelving as per room layout approx. 300mm deep. Shelving will be fitted to adjustable spur rails and brackets, 2 tiers on each section. Where there are exposed corners, these are to be have a 40mm radius put on them. Colour sand.

Blue lab between the WHB sink and the epoxy lab sink, a fitted Trespa splash screen This will have a large radiused front top corner.
Blue lab between the MSC's and the wall please allow for 3 x small shelves at MSC frame height to place lab gloves etc. on. Approx. size 300mm x 760mm

Our trusted contractor is ALS.

Epoxy Sinks:

All new and old water supplies and drainage, sink alterations must comply with L8 regulations. Water bylaws must also be observed. Any dead legs on the new, modified, or old water system must be removed.

Epoxy sink 400mm deep with integral drainer unit (colour from standard range of MHRA approval). This sink will be installed as per drawing layout. The waste pipe is to connect to existing pipework where practical. Hot and cold-water outlets including drains and traps.

It is to have a Trespa splash back). It will come with a tube style removable plug. (Counter lever laboratory taps) and all waste pipes must be in vulcathene or as existing.

In the Blue lab where there is an epoxy sink, this must have a small radiused splash screen towards the ceramic sink.

Ceramic Sinks:

All new and old water supplies and drainage must meet current L8 regulations. Water bylaws must also be observed. Any dead legs on the new, modified, or old water system must be removed.

All 4 labs will have installed a 400mm ceramic wash hand basin with Trespa splash back approx 400mm. These sinks will have lever taps. Hot and cold-water outlets units including drains and traps. The ceramic basin area will have a paper hand towel dispenser/ a soap dispenser and a small mirror to adjust mob caps or clothing. Around each of the ceramic sinks an eye wash rinse bottle is to be fitted to the wall. The sink is to sit forward from the wall and have a small shelf at the back. This shelf is to be made from Trespa, colour sand.

Electrical:

All new electrical work shall be carried out in accordance with *IEE Wiring Regulations Current Edition and relevant revisions.*

Isolations will be carried out in accordance with SOP 6373

Electrical and Trend panels within the plant room must be air cooled or fan assisted.

Allowance must be made within your return for correctly sized new distribution board breakers accompanied with cable size and volt drop calculations.

CPC' (circuit protective conductors) shall either be an incorporated core or a separate cable, for SWA's the armour is for mechanical protection only.

Power distribution and containment Trunking

Marco Elite 60 dado trunking to be utilised for Lab power outlets This trunking accommodates the Cat 7 data coms cable and meets the IT standard for data cable bends and terminations. Site standard MK accessories (white two gang switched outlet's).
Power to MK outlets to be a minimum of 4mm CSA and a minimum of two circuits per Lab.

Lab power to socket outlets, RCD's are to be installed within the trunking within the lab current site specification is a Legrand (40 amp Ithermal) and 30mA trip rating to BS EN61008-1.

Cable trays shall be perforated and supplied in nominal 2,400mm lengths manufactured from galvanised mild steel complying with BS 1499 (Classification CR4/GP). Cable tray accessories shall be supplied by the Cable Tray Manufacturer; only where these are inadequate to meet special conditions can site-fabricated accessories be accepted with the approval of the Supervising Officer. Holes cut in cable trays for the passage of cable shall be drilled and suitably bushed
Fixing of cable trays shall unless otherwise stated be at intervals not exceeding 1,200mm and at 200mm from bends of intersections. Fixing shall be either by brackets made by the Cable Tray Manufacturer of brackets made from "Unistrut" and/or "Unirax" sections whichever are preferred.

Trays up to but not including 150mm wide shall be 20 SWG thick: all cable trays shall be of the return flange-type.

Unless otherwise required wiring tray and accessories shall be finished in hot dip galvanised after manufacture and sections of wiring trays shall be jointed together with 6mm diameter mushroom headed safety bolts and nuts to comply with BS 1494, Part 1. Adequate copper earthing strips shall be fitted at every joint. A minimum clear space of 25mm shall be left behind all cable trays.

Power sockets:

Red Lab:
18 x twin power sockets above bench level.
12 x twin power sockets below bench level.

Yellow lab:
15 x twin power sockets above bench level.
10 x twin power sockets below bench level.

Green Lab:
12 x twin power sockets above bench level.
7 x twin power sockets below bench level.

Blue Lab:
13 x twin power sockets above bench level.
6 x twin power sockets below bench level.

Addressable Fire Smoke Detectors:

The smoke detectors in each of the labs are to be kept and re-installed once the works are complete. The reception computer graphics will need updating to reflect the new layouts. ADT is the supplier.

Lighting:

All 4 labs. Surface mounted IP 65 rated containment room LED lighting on the plaster board ceiling to provide 450 lux @ bench level switched by PIR / Daylight control. Lights are to be manufactures sealed to prevent ALL air leaks from the room. Agreed lights are to be on the emergency lighting circuit.
Emergency lighting should be fitted as demanded by the various regulations in force. Where there is a requirement to replace or install emergency lighting it should consist of a non-maintained bulkhead situated near the exit of the lab/office/room with an emergency key switch mounted in an accessible position. Battery life must be 3 hours minimum. (RS stock number 483-8837) IP 65 non maintained emergency luminaire
Manufacturers Part no. ZE8/3/ICEL.

Data/Trend Outlets

The data cable will be CAT 7 class F.
And must be installed by an Nexans approved installer (see Data Specification)

Trend alarm monitoring will be required for the lab pressures, fridges and freezers housed within the labs. Trend is to be seen on both the main Supervisors in the Maintenance Workshop and the BMS technician's office. These are shown on the drawings. Our preferred and trusted installer for Trend BMS is Detail Design Engineering (DDE).

Red Lab:
9 x dual data outlets
11 x BMS Trend Sensor points

Yellow lab:
5 x dual data outlets
9 x BMS Trend Sensor points

Green Lab:
3 x dual data outlets
7 x BMS Trend Sensor points

Blue Lab:
5 x dual data outlets
6 x BMS Trend Sensor points

Earth Bonding

The bonding of the electrical installation is to be carried out to the requirements to the current IEE Regulations and the Electricity Boards recommendations, special attention to be paid to the bonding of extraneous metalwork.

Inspection & Testing

The installation shall, upon completion, be inspected and tested in accordance with the standard procedure within the IEE Regulations.

The Contractor's attention is drawn to the electronic components within the control system which is disconnected before carrying out any tests.

Upon completion of the project the whole installation shall be inspected and completion with a inspection certificate submitted in accordance with the IEE Regulations Appendix 1.5

Labels

All items of equipment and sockets, data outlets etc. shall be fully identified with a label showing which distribution board or cabinet they are fed from.

The distribution board legend updated

Supply & Extract AHU units.

The new mechanical services are to be designed to maintain the required pressures and number of air changes to meet the specification.

Standby/Duty direct drive fans need to be installed both on the supply side and the extract. All motors will be inverter driven with an extra 25% redundancy so the system can ramp up and down as required to keep the balance of the lab pressures.

In the Blue lab, supply and extract grills/diffusers need to be directional and not the spiral type. Airflow must be considered around the MSC end of the lab, so as not to cause eddies and disrupt airflow at the cabinet.

The existing HVAC units will need replacing and new units installed which gives the required air flows and pressure regimes. Heating and cooling coils will also need to be incorporated

along with Trend BMS controls which will link back to the Maintenance/Trend workshops. A full set of remotely controllable graphics needs to be installed so engineers can make adjustments and control the system.

The filters for the new AHU must be from our approved and trusted supplier Jasun and the bag filters are to be the standard size REVO type. All other filters are to be off the shelf standard sizes. One complete spare set of filters must be allowed for in your tender return.

Modifications to the ductwork will need to happen for the new AHU to be installed. All electrics will need to be stripped back to the control panel and renewed.

All valves, strainers and non-return valves etc. will need replacing and the pipework that serves the AHU cut back to a practical position and replaced. The contractor is to check the size of the pipework and ensure that the pipe is of sufficient size to provide the correct amount of heating and cooling to meet the new air flows and temperature requirement of the laboratories.

The system is to operate under automatic control using the site wide Trend BMS system, which will be altered and developed to take in to account the changes required for the new laboratories.

The Trend BMS logic control is to automatically adjust the room pressures via inverter and suitably installed dampers that prevent “hunting” adjustments to accommodate the various configuration of use of the MSC’s.

The entire suite must have air pressures and flow rates rebalanced after the works have taken place, and a report submitted with client sign off.

Control Panels:

The existing Walkers panels are to be replaced with new dedicated ones. They must control all aspects of the AHU system and the required plant. The components inside must be standard control parts and be readily bought off the shelf.

Our strong preference within the cabinets are to use the “Wago” style connectors, and also the Wago Octal bases for the control relays. These can be viewed at https://www.wago.com/gb/

The cabinet is to be made from steel and powder coated, lockable double doors, with a defeat able electrical isolator switch. On the doors are to be mounted lamp testing buttons. The inside components will be Trend IQ4 controller/outstations. The cabinet is to be vented with fan assist.
Please can you firm up the existing lead time for the manufacture of the cabinets, and state this in your return.

Trend: Within the control panel, 1 x Cat 7 data outlet needs to be installed for use with the service engineer.

Air Pressure:

Note: All air pressures are relative to the corridor.

Above each threshold a pressure magnehelic is to be installed showing the pressure within the lab.

The air pressure in the Yellow/RED laboratory +/- 2 Pa

Within the first phase of the works within the Retro PCR, there are two different pressure requirements. In the main RED lab, during the interim period between phases being completed, this lab will be deemed yellow and will function at -30Pa on the window side lab and -15Pa in the corridor side lab. Once phase two is completed this lab will change to Red and will function at -45Pa on the window side and -30Pa on the corridor side.

Temperature: 21 ºC +/- 2 ºC
Air Changes: 15-20 / hr
Relative Humidity: Ambient

Air Pressure: The air pressure in the Green/YELLOW laboratory +/- 2 Pa
Within the first phase of the works within the Retro PCR, there are two different pressure requirements. In the main YELLOW lab, during the interim period between phases being completed, this lab will be deemed green and will function at +30Pa with the lobby running at +15Pa. Once phase two is completed this lab will change to YELLOW and will function at -15Pa with the lobby running at +0 Pa or ambient.

Temperature: 21 ºC +/- 2 ºC
Air Changes: 15-20 / hr
Relative Humidity: Ambient

Air Pressure: The air pressure in the GREEN laboratory +/- 2 Pa
Within the second phase of the works within the PCR, the pressure regime is to function at +15Pa with the lobby running at +0Pa or ambient.

Temperature: 21 ºC +/- 2 ºC
Air Changes: 15-20 / hr
Relative Humidity: Ambient

Air Pressure: The air pressure in the BLUE laboratory +/- 2 Pa
Within the second phase of the works within the PCR, the pressure regime is to function at +15Pa

Temperature: 21 ºC +/- 2 ºC
Air Changes: 15-20 / hr
Relative Humidity: Ambient

Commissioning

Any instruments used, must be UKAS certified with an approved calibration test sheet. These sheets and test results must form part of the electronic O and M file.

Personnel Training:

Upon completion and commissioning of all works described within this tender the contractor must allow sufficient training for up to six maintenance personnel in all aspects of maintenance and fault finding within the supplied equipment including a demonstration of the TREND installation and graphics

Maintenance

All plant and its subsidiary components must be easily accessible for routine servicing and maintenance.

The Contractor is to make provision for and submit details of requirements to ensure the safety and serviceability of the structure, including:
- Critical parts that should be regularly inspected, with recommendations for the frequency of inspection.
- Elements susceptible to corrosion, mechanical wear or fatigue that may need to be reconstructed or replaced during the design working life of the structure.
- Means of safe access for maintenance and repair.

Submit:
- Manufacturer's maintenance instructions.
- Guarantees, warranties, test certificates, record schedules and log books.
- Electrical works certification. The employer utilises easy cert software to produce its initial verification test certificates and condition reports. We require certificates to be produced by the contractor sitting with one of the Employers staff to enter the necessary details.

Operation and Maintenance Manuals will need to be provided showing new equipment and as built drawings, along with all certification and commissioning details. A full set of O&M's must be provided electronically in word / PDF format and Drawings must be in AutoCAD format.

Other

There are coat hook rails in the existing labs, these are to be kept and re-installed at the end of the works. Location TBA.

Please provide a standard white 12 hour analogue wall mounted battery powered lab/office clock in each of the labs. The clock is to be approx. 215mm wide location to be agreed.

Note: The lab chairs are for indication of seating arrangements and do not form part of this tender.

Please allow hire for the duration of the project phase 1, for a 20-foot x 8-foot steel storage container. This is likely to be located near our South carpark side of site. This is for storage of laboratory equipment and sundry items. The container must be dry and have a locking front door. The ground must be prepared with slabs or have adjustable feet to site the container level.

Cost savings and options

Please provide alternative cost saving ideas or options on how this project can save money or time, and still give us the high quality required.

CDM Advisor	Simon Rigers **F**ramptons **P**roject **S**olutions Ltd. Denbrook, Tunworth Road, Mapledurwell, Basingstoke, Hampshire RG25 2LU (Tel +44(0)1256 358050 (Mobile +44(0)7974 252344 *mail simon@fpsconsultants.co.uk

Building Management System (BMS)	The following Contractor has experience of working on the Building Management System in the past. Note the Contractor is responsible for the provision of any containment and cable pulling not the trend provider. Detail Design Engineering Hampshire House, Wynnstay Road, Sale, Cheshire, M33 7DW T: 0161 905 3198 F: 0161 905 3208 M: 07976 725853 E: Jkilpatrick@detail-design.co.uk
Fire Alarms	ADT Fire, for all required works around the Fire alarm sensors, removals and relocations including but not limited to required updates on our fire alarm systems and graphics. Unit 8 Prospect Business Park, Langston Rd, Loughton Essex IG103TR. T: 02082724700 F: 02082724709
Data Cabling	Nexans approved installers
Laboratory Benching	ALS Unit 2, Lakes Road, Braintree, Essex. CM7 3SS Tel :01376322938
Vinyl flooring & wall Cladding	3D Flooring Unit 16 Little Park Enterprises Ifield Wood Crawley RH11 0JZ