

Schedule 7

Outline Commissioning Plan and Completion Criteria¹

¹ To be adapted on a project specific basis.

Part 1) - Outline Commissioning Plan

- 1 The programme for the Outline Commissioning is set out in Appendix 1 (*Outline Commissioning Plan*) and sets out a programme of activities, timescales and interdependencies for the Works.
- 2 The dates for post-completion equipment installation and phased Resident transfer by the Authority set out in the Outline Commissioning Plan is subject to review by the Authority. These will be reviewed by the Authority prior to inclusion in the Final Commissioning Plan. However, for the avoidance of doubt, such dates shall be contained within the timescales identified in the Outline Commissioning Plan.

Part 2) - Completion Process

For the avoidance of doubt, the Works shall be progressively tested by reference to this Schedule 7

Without prejudice to clause 21.5 (*Pre-Completion Inspection*) the Service Provider shall give [◆] Business Days' notice to the Independent Certifier and the Authority Representative of the date on which any test listed in Appendix 2 (*Completion Tests*) is to be carried out.

Completion Criteria

The Completion Criteria, which must be satisfied before a Certificate of Practical Completion can be issued in respect of the Works are as follows:

1 The Service Provider Certificate of Compliance

The Service Provider has issued the Certificate of Compliance. For the purpose of this Schedule 7, the Certificate of Compliance shall be in the form found in Part 3 of Schedule 5 (*Certificates*) stating that the Works have been designed and meet the requirements of the applicable Zone Data Sheets, 1:50 loaded drawings, the relevant parts of the Authority Construction Requirements and Service Provider Proposals and all Approved RDD Items.

2 The Completion of Testing

Each component of the Works shall have been tested and commissioned in accordance with the Completion Tests set out in Appendix 2 (*Completion Tests*), and the Service Provider shall have provided all documentary evidence in accordance with the requirements of Appendix 3 (*Documentary evidence required to support the Completion Tests*). The Service Provider shall also have provided a timetable (agreed with the Authority) for the final balancing and adjustment of the mechanical and electrical services to take place after the completion of the Works. The final balancing and adjustment works shall include works in connection with:

- (a) the installation of equipment entailing connection to previously installed services;
- (b) the installation of Equipment which is provided by the Authority that impose a load on, and are adjustments to, previously installed services; and
- (c) final occupancy level imposing a load on previously installed services.

3 Access Devices

All keys, swipe cards and other access devices provided as part of the Works shall have been labelled and formally handed over to the Authority.

4 As Built Documentation

Without prejudice to clause 21.13 (*Building Manual*) of this Agreement, a schedule of the proposed dates for the issue of the as-built drawings, specifications and updated schedules

of accommodation shall have been provided by the Service Provider and agreed with the Authority.

5 Builders Clean

The builder's clean is complete in accordance with industry accepted standards and all areas of the Facilities are substantially free of all materials, plant and equipment used in connection with the Works, which are not required by or in connection with the provision of the Services.

6 Access and Egress

Safe access and egress to the Facilities comprising the Works has been established.

7 Building Control Approvals

Written confirmation of Building Control Approvals has been provided by the Service Provider for the Works and a Building Control completion certificate has been provided.

8 Energy Targets

Written confirmation has been provided from the Service Provider that the Works has been designed and constructed in accordance with [the Energy Model] with the intent of achieving the energy performance targets.

9 O&M Manuals

The preliminary Building Manual for the Facilities, containing, as a minimum, all the testing and commissioning information including the mechanical and electrical services so far as it is reasonably practicable to provide at such stage (and that is relevant to the Works) have been submitted to the Authority.

10 Signage

All building, directional, departmental, general information and room numbering signage as indicated on drawings approved as Reviewable Design Data and necessary to allow the operational Services to commence has been provided and/or installed.

11 Quality Assurance

All evidence of Service Provider's quality assurance inspection records as may be requested by the Independent Certifier has been satisfactorily provided.

Part 3) - Commissioning Procedures

1 Introduction

This Part 3 of Schedules 7 sets out:

- (a) Pre-Completion Commissioning activities;
- (b) Post-Completion Commissioning activities;
- (c) a description of the Commissioning Process;
- (d) the rectification of damage on a Commissioning Damage Notice; and
- (e) the Decommissioning process.

2 Pre-Completion Commissioning Activities

2.1 *Service Provider's Pre-Completion Commissioning*

The Service Provider's Pre-Completion Commissioning will comprise, in relation to the Works, the following activities:

- (a) finalisation of the commissioning brief and procedural documentation in accordance with the Authority Construction Requirements;
- (b) commissioning and testing necessary to meet the Authority Construction Requirements and the Completion Criteria;
- (c) obtaining approvals/licences to meet the relevant statutory requirements and/or required for the operation of the Facilities comprising the Works;
- (d) providing reasonable co-operation to the Authority to facilitate the Authority obtaining all licences and approvals;
- (e) clinical cleaning including swab tests;
- (f) disposal of all equipment packaging arising from the Works;
- (g) training of nominated Authority staff, to be within time periods shown in the Outline Commissioning Plan to suit the Commissioning Programme;
- (h) notice of the required date of delivery of Authority Equipment which notice shall be in sufficient time to allow the Authority to procure such equipment.

2.2 *The Authority's Pre-Completion Commissioning*

The Service Provider shall allow the Authority access into the Access Areas on the Access Dates to undertake equipment installation and commissioning in accordance with the procedure set out in paragraph 2.3.

2.3 *Installation of Authority Equipment*

The procedure for installation of Authority Equipment is as follows:

- (a) the Service Provider shall, no later than the Access Date:
 - (i) ensure that the Access Area is in such condition that an Access Certificate can be issued pursuant to paragraph 2.3(d); and
 - (ii) grant access to the Authority to the Access Area for the purposes of installing Authority Equipment that is to be installed prior to the Actual Completion Date and associated works;
- (b) the Access Areas are:
(To be completed by the Authority and the Service Provider);
- (c) the Access Dates shall be shown in the Outline Commissioning Programme;
- (d) the Service Provider's Representative shall give to the Authority and the Independent Certifier at least ten (10) Business Days written notice of the date on which the Access Area will have been completed to such a stage that an Access Certificate can be issued.
- (e) the Independent Certifier shall inspect the Access Area and provided that the Access Area is suitable in all regards for installation of the relevant Authority Equipment, the Independent Certifier shall issue a certificate (the **Access Certificate**);
- (f) where the provisions of paragraph 2.3(e) not have been satisfied, the Service Provider shall give not less than two (2) Business Days notice of dates when a further inspection can take place and this procedure shall continue until the Access Certificate is issued;
- (g) if an Access Certificate has not been issued in respect of an Access Area by the Access Date; the Service Provider shall pay to the Authority any reasonable costs properly and directly incurred as a result of the delay in the issue of an Access Certificate;
- (h) provided that the Service Provider has complied with paragraph 2.3(e) and an Access Certificate has been properly issued by the Access Date the Authority shall not be entitled to contend that completion of the Works has not been achieved if the Authority Equipment or any associated fittings or finishes have not been supplied and/or installed by the Authority in sufficient time to allow the Service Provider to carry out technical commissioning and any other minor finishing and cleaning works (unless due to any act or omission of the Service Provider). For the avoidance of doubt the Access Certificate has not been issued by the relevant Access Date, Completion of the Works shall not take place until:

- (i) completion of installation and commissioning of the Equipment (excluding, for the avoidance of doubt, the Authority Equipment); and
- (ii) completion of the associated Works.

3 Post-Completion Commissioning Activities

3.1 *The Service Provider's Post-Completion Commissioning*

The Service Provider's Post-Completion Commissioning will be carried out after the Actual Completion Date in accordance with the Final Commissioning Plan and will comprise:

- (a) testing and balancing the re-calibration, comprising adjustment and final connection, of services and associated environmental systems where:
 - (i) post-completion installation of transferred items of Authority Equipment entails connection to previously installed services; and/or
 - (ii) post-completion installation of transferred items of Authority Equipment imposes a load on or adjustment to previously installed services; and/or final occupancy levels impose a load on the installed services and environmental systems;
- (b) rectification of all Snagging Matters in accordance with clause 21.11 (*Carrying Out of Snagging*);
- (c) clinical cleaning including swab tests;
- (d) autoclave tests and accreditation by a suitably qualified person;
- (e) completion of post-completion outstanding matters as agreed with the Authority;
- (f) rectification where there is damage to the fabric of any of the Works that is attributable to any act or default of the Service Provider in undertaking its post-completion commissioning activities or in carrying out the Works.

3.2 *Authority's Post-Completion Commissioning*

The Authority's Post-Completion Commissioning will be carried out after Actual Completion Date and will comprise:

- (a) the occupation of the Works (calling upon the resources of the relevant Sub-Contractors where necessary) and the continued training of Authority employees (whether conducted by the Authority or the Service Provider and/or the Sub-Contractors) in accordance with the periods set down within the Final Commissioning Plan;
- (b) the receipt, distribution and transfer of all items of Authority Equipment;

- (c) the transfer of other Authority items, including but not limited to clinical specimens and the Authority's information technology related equipment;
- (d) disposal of packaging brought into the Works by the Authority or any Authority Party;
- (e) validation, assembly and cleaning of Authority Equipment;
- (f) labelling and identification of all Authority Equipment;
- (g) location and design of secure areas for receipt, storage, testing and distribution of Authority Equipment as agreed with the Service Provider;
- (h) provision, planning and management of Authority staff orientation and training;
- (i) planning and management of Authority staff and Resident transfers; and
- (j) the decant of relevant Authority Parties and Residents into the Facilities comprising the Works.

4 Rectification of Damage Identified on Post-Completion Commissioning Damage Notice

- 4.1 The Service Provider is required to provide protection to the relevant Works including to lifts, stairs, corridors, doors and vulnerable corners.
- 4.2 During Post-Completion Commissioning, should damage to the Facilities occur, a Schedule of Damage will be prepared and issued by the Service Provider to the Authority, together with a Commissioning Damage Notice. For the avoidance of doubt, the Schedule of Damage will clearly identify whether the damage is attributable to the Service Provider or the Authority.
- 4.3 Following the issue of the Commissioning Damage Notice, the Service Provider shall prepare a programme to be agreed by the Authority Representative for the rectification of all Commissioning Damage listed in the Schedule of Damage. The rectification work shall be carried out in accordance with the agreed programme in such manner as to cause as little disruption as reasonable practicable to the Authority's use of such part of the Works.
- 4.4 If, within thirty (30) Business Days of the date specified in the programme for the rectification of all Commissioning Damage specified in the Commissioning Damage Notice, the Service Provider has failed to rectify the Commissioning Damage, the Authority may by itself (or engage others to) carry out the works necessary to rectify the Commissioning Damage in question, at the risk and cost of the Service Provider. Provided that where it is not possible to complete rectification of Commissioning Damage due to non-availability of any component, then the Authority, acting reasonably shall agree on appropriate programme for the relevant works.

5 Decommissioning Process/Support Services During The Works²

5.1 The table below sets out support services responsibilities in the areas shown in the plan during the Works.

Service	From Financial Close up to Service Date	From date of First Transfer to Opening of The Works
Support Estates Services	Authority	the Service Provider

Opening means that all Residents have been transferred to the Facilities and Care Services are being provided by the Authority.

5.2 The Support Estates Services comprise:

- (a) Decommissioning the existing building, prior to demolition;
- (b) isolating all services and make safe;
- (c) clearly labelling existing services to be retained;
- (d) [carrying out all measures in the (*list areas*) to manage the risk of contamination from infection, including for example, the taping up of windows, provision of temporary ventilation if required to prevent Aspergillus entering the buildings during adjacent demolition or excavation works;]
- (e) issuing of any third party certificates including statutory notices/CDM Regulation information for all relevant areas of the Works (that is decant/decommissioning areas);.
- (f) provision of temporary way finding signage (internal and external, temporary or permanent but of reduced standard) within the existing estate and buildings;
- (g) managing and operating the Permit to Work system (including providing approved persons and manpower to carry out temporary shutdowns/changeovers on any services required to construct the Works); and
- (h) carrying out all current Authority estates department functions during the decant periods (e.g. arrange, manage and carry out all works involved in the move).

5.3 The parties agree that it remains a Authority responsibility throughout the Works.

- (a) to remove/dispose of all loose furniture and equipment in the Facilities; and

² Project specific if there is existing facilities that are being used whilst new facility is being constructed and the Authority wishes to use the Service Provider to assist with the decanting/decommissioning process.

- (b) to arrange, manage and carry out all activities associated with the decant of Residents and Authority staff.

6 Completion and Commissioning Process

The draft Final Commissioning Plan will be issued by the Service Provider to the Authority not less than [twelve (12) months] before the Planned Completion Date.

Appendix 1: Commissioning Programme

[To be inserted]

Appendix 2: Completion Tests

Component of the Works	Criteria	Tests
Building Structure	<p>Foundations have been constructed on appropriate bearing strata constructed to current Codes of Practice taking into account the loadings to be sustained, prevailing ground conditions and the effects of any settlement on new superstructure and on links to adjacent buildings.</p> <p>Structures supporting sensitive equipment to be robust with deflection and vibration characteristics which are in compliance with the Project Documents.</p>	<p>Compliance with British Standards, Code of Practice and Building Regulation Certificate of Compliance.</p> <p>Details of imported fill compliance with Highways Agency "<i>Specification for Highways Works</i>". Results of static load tests on piles carried out in accordance with Institution of Civil Engineers "<i>Specification for Piling Works</i>".</p> <p>Results of integrity tests on piles carried out in accordance with Institution of Civil Engineers "<i>Specification of Piling Works</i>".</p> <p>Details and results of any contamination testing to be carried out by UKAS accredited laboratory. Inspection reports on water excluding structures (basements) with reference to BS[♦].</p> <p>Summary report of concrete cube tests results carried out to British Standards.</p> <p>Summary report of mortar compression test results carried out to British Standards.</p> <p>Intumescent coating manufacturer's inspection reports and intumescent fire resistance certificates.</p>
Roads and Paving	<p>To comply with the requirement of the Highway Agency Manual of Contract Documents.</p> <p>As described in the Authority Construction Requirements.</p>	<p>Material conformance certificates and compliance with Project Documents.</p>
Below Ground Drainage	<p>Drains to be free from obstruction to achieve design flow rates and do not leak.</p>	<p>Components are to comply with British Standards [<i>list relevant standards</i>].</p> <p>Results of water tests to drains carried out to BS[♦] and "<i>Sewers for Adoption</i>". Results of water tests to manholes carried out to BS[♦].</p> <p>Material conformance certificates and compliance with the Project Documents.</p>

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Component of the Works	Criteria	Tests
External Walls	<p>Compliance with the Project Documents.</p> <p>Internal noise level requirements to comply with HTM 2045, and HTM 2025.</p> <p>No pattern staining due to surface water run-off.</p> <p>No water penetration or interstitial condensation evident.</p>	<p>To be supported with evidence of calculations demonstrating compliance with performance requirements including, permeability, water tightness, resistance to wind loads and fire performance, to British Standards (<i>list relevant standards</i>) and Codes of Practice.</p> <p>Acoustic Tests to BS[♦] (measurement of sound insulation in buildings and of building elements).</p> <p>Visual inspection.</p> <p>In accordance with BS(♦).</p> <p>Local Authority sign off</p> <p>Confirmation that Parts L1, L2 of Building Regulations are met.</p> <p>Receipt of manufacturers test results where applicable.</p>
Internal Walls and Partitions	<p>All partitions shall have the ability to resist the passage of fire and maintain integrity and stability.</p> <p>Partitions shall be set accurately to line, level and plumb, and within permissible deviations.</p> <p>No constituent material shall promote or sustain the growth of fungi, micro-organisms or insects.</p> <p>Internal noise level requirements to comply with the Project Documents.</p>	<p>Test in accordance with British Standard and test assembly, to height, configuration and plan dimensions as set out on the agreed Fire Strategy drawing and as described in HTM 56 CP 122 and British Standards [<i>list relevant standards</i>].</p> <p>Visual Inspection.</p> <p>Visual Inspection.</p> <p>Local Authority sign off and written confirmation of rectification of non-conformances for standard rooms</p> <p>Documented results of Acoustic room tests for requirements.</p> <p>Acoustic test to BS[♦] Measurements of sounds insulation in buildings and of building elements to British Standards.</p>
Windows and External Glazing	<p>Sound; secure and weatherproof; no leakages, easily operated; ironmongery in operating order.</p> <p>Fire resistance of all external glazing shall be in accordance with the requirements of the British Standards.</p> <p>Opening lights shall be fitted with restrictors to limit opening to 100mm. Clear air gap.</p> <p>The external glazing must accommodate a design wind pressure calculated in accordance with BS(♦): appropriate to the locality of the facilities, and for the relevant exposure and height of building.</p>	<p>Test in accordance with British Standards (<i>list relevant standards</i>).</p> <p>Test in accordance with British Standards (<i>list relevant standards</i>).</p> <p>Test in accordance with 100mm ball test.</p> <p>Test in accordance with British Standards (<i>list relevant standards</i>).</p>

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Component of the Works	Criteria	Tests
Roofs	<p>Sound transmittance of roof shall conform with the internal noise level requirements of HTM 2045 and as described in the Project Documents.</p> <p>Calculate wind loads on roof in accordance with British Standards.</p> <p>Water penetration must not occur under site exposure conditions.</p> <p>The roof must provide an adequate barrier to the spread of fire from neighbouring buildings as set out in BS[◆]</p> <p>Roofs and roof voids to which access is provided to have protection to satisfy Building Regulations and Health and Safety Regulations.</p>	<p>Test in accordance with British Standards (<i>list relevant standards</i>) and the Project Documents</p> <p>Calculations as BS[◆] for proposed construction.</p> <p>Tested in accordance with British Standards [<i>list relevant standards</i>] for water absorption and wetting and drying. Also visual inspection.</p> <p>Test in accordance with British Standards [<i>list relevant standards</i>]</p> <p>Visual Inspection for compliance with the Fire Strategy layout drawing.</p> <p>Also visual inspection. In accordance with BS[◆] Test Method.</p> <p>In accordance with British Standards [<i>list relevant standards</i>].</p>
Ceilings	<p>Suspended ceiling must safely support all loads in accordance with the Project Documents.</p> <p>Protective finish and performance requirement shall be in accordance with British Standards and HTMs.</p> <p>All substantial conductive parts of the suspended ceiling are to be electrically continuous and fully earthed bonded in accordance with BS[◆].</p> <p>Fire spread rating for materials exposed both to the room and the void shall meet the requirements of the British Standards and the Building Regulations.</p> <p>Sound absorption shall be in accordance with HTM 2045.</p>	<p>In accordance with British Standards [<i>list relevant standards</i>].</p> <p>In accordance with British Standards (<i>list relevant standards</i>).</p> <p>In accordance with British Standards [<i>list relevant standards</i>].</p> <p>In accordance with British Standards . [<i>list relevant standards</i>].</p> <p>In accordance with HTMs [<i>list relevant HTMs</i>] and British Standards [<i>list relevant standards</i>].</p>
Doors and Ironmongery	<p>All door sets shall comply with the performance requirements in HTM 58.</p> <p>All ironmongery must be covered by a test certificate, including door closers, floor springs and electro-magnetic closer mechanism.</p> <p>Each fire door/ door set shall comply with requirements for fire resistance.</p>	<p>Manufacturer's Certificate.</p> <p>Door security test to manufacturer's certification.</p> <p>In accordance with British Standards tests of fire resistance.</p>

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Component of the Works	Criteria	Tests
Stairs, Walkways and Balustrades.	<p>Stairs, balustradings and handrail loadings shall be as specified in BS[♦].</p> <p>Detailed dimensions of width and depth for passing and turning when evacuating in an emergency shall be in accordance with HTM 81.</p> <p>Fire resistance of all staircases and enclosures shall comply with the requirements of the Building Regulations and relevant HTMs.</p>	<p>To comply with the requirement of Building Regulations and British Standards (<i>list relevant standards</i>).</p> <p>In accordance with Building Regulations.</p> <p>In accordance with British Standards (<i>list relevant standards</i>).</p>
Floor and Wall Finishes	<p>Coverings sound; secure and of even surface</p> <p>Floor finishes, screeds and adhesives to comply with Building Regulations, British Standards, British Standards Code of Practices and HTM 61.</p> <p>Extra slip resistance for floor finish to rooms and areas defined on Zone Data Sheets. Particular requirements are to be followed for kitchens.</p>	<p>Visual inspection in accordance with British Standards [<i>list relevant standards</i>].</p> <p>Inspection in accordance with British Standards [<i>list relevant standards</i>] and Approved RDD Items and room finishes specification set out in [♦].</p> <p>Evidence of consultation and approval of Environmental Health Officers and to British Standards.</p>
Signage and Way Finding	All signage for the satisfactory operation of the hospital.	Visual inspection for compliance with Reviewable Design Data signage and wayfinding strategy.
Fixtures and Fittings	No materials used shall support the growth of bacteria, fungi, etc or encourage the harbouring of insects.	In accordance with British Standards (<i>list relevant standards</i>), Codes of Practice, Evidence of Consultation and approval of Authority's Infection Control Officer.
Sanitary Appliances and Fittings Accessories	<p>All components shall comply with HTM 64 and the requirements of relevant British Standards (<i>list relevant standards</i>) as listed in the output specifications.</p> <p>Installed in accordance with manufacturer's recommendations.</p>	<p>In accordance with British Standards [<i>list relevant standards</i>].</p> <p>Review of QA procedures and confirmation of Rectification of non- conformances</p> <p>Visual Inspection.</p>
Purpose Made Joinery	After machining and fabrication, sections shall be free from twist and bowing, surfaces to be smooth and free from testing, wooliness, chip bruising and other machining defects.	In accordance with British Standards (<i>list relevant standards</i>). Visual Inspection for compliance with 1:20 Reviewable Design Data drawings
Purpose Made Metalwork	<p>Metal arc welding, TIG welding and MIG welding to BS[♦].</p> <p>Anodising</p>	<p>In accordance with BS[♦].</p> <p>In accordance with BS[♦].</p>
Carpentry/Timber Framing/ First Fixing	Design and detail the work to BS[♦] to satisfy loading requirements.	In accordance with BS[♦]

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Component of the Works	Criteria	Tests
Preservative/Fire Retardant Treatment	Moisture content of timber at time of treatment to be no more than 28% Leach resistant Fire Retardant Treatment: Moisture content at time of treatment 22% for timbers up to 50mm thick.	In accordance with British Standards [<i>list relevant standards</i>].
Landscaping	All soft landscaping to meet the requirements of the services performance specifications, workmanship and materials to conform to British Standards. Imported topsoil shall be in accordance with BS[◆] either Premium or Amenity grade general texture.	Visual Inspection in accordance with British Standards [<i>list relevant standards</i>] and landscaping layouts Approved RDD Items.
Engineering Services	Engineering services as commissioned to be in accordance with the Authority Construction Requirements; CISBE Commissioning Guides (CISBE-CG); NHS Model Engineering Specification; IHEEM- Commissioning of Engineering Services.	Testing of the Works to be carried out to determine compliance with the Project Documents.
Mechanical Engineering Systems	Records of percentage testing carried out in the construction and pre-commissioning periods shall be available to demonstrate fitness of systems prior to commencement of commissioning.	Examination and testing to confirm that each system, components and equipment are complete and in a safe condition.
Heat Source and Distribution - Boilers (Steam) Boilers (LPHW) Steam and Condensate	<p>Setting to work, balancing and regulation to meet design performance.</p> <p>Boiler Plant Output and Efficiencies.</p> <p>Fuel storage and supply systems flow rates. Steams distribution and condensate collection.</p> <p>Pressures and flow rates.</p> <p>Exhaust gas systems instrumentation and controls.</p> <p>Operation of pressure relief and other safety systems.</p>	Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents, CISBE Commissioning Guides (CISBE-CG).
Water Systems: Hot and Cold water heating systems Chilled water systems Hydrant System	<p>Setting to work, balancing and regulations to meet design performance:</p> <ul style="list-style-type: none"> • flow rates; • distribution systems; • outlets; • components; • temperatures; and • safe water temperatures. 	Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents and HTM 2027.

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Component of the Works	Criteria	Tests
Ventilation Systems: Mechanical supply Mechanical Clean Extract Specialist Ventilation Services Mechanical Dirty Extract	Setting to work, balancing and regulation to meet design performance and room pressure differentials: <ul style="list-style-type: none"> • Flow rates; • Distribution systems; • Outlets; • Components Temperatures; and • Instrumentation and controls. 	Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents, - CIBSE Code A - Air distribution systems and HTM 2025
Refrigeration: Sealed Units Storage Cabinets Body Stores Deep Freeze Units Cook-Freeze cabinets Chilled water plants Cold rooms	Setting to work, balancing and regulation to meeting design performance: <ul style="list-style-type: none"> • flow rates; • distribution systems; • outlets; • components; • temperatures; • instrumentation and controls; and • safety and alarm systems. 	Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents, - CIBSE Code R - Refrigerating Systems.
Fire Protection Installations	Setting to work, balancing and regulation to meet design performance: <ul style="list-style-type: none"> • fire hydrants; • sprinklers; and • dry riser. 	Fire protection Installations to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents, Fire Extinguishing Installations. Fire Code. Sprinklers - test and certify in accordance with Loss Prevention Council Dry Risers - flow and pressure tests.
Radiological Protection	All components of the works – including external and internal walling, doors, ceilings floors – to meet radiological protection standards where applicable.	Rooms to be tested in accordance with the Authority's Radiological Protection Advisors requirements.
Electrical Services	Records of tests carried out in the construction and pre-commissioning periods shall be available to demonstrate fitness of systems prior to commencement of commissioning. These shall include but not limited to: <ul style="list-style-type: none"> • examination and testing to confirm that each system, components and equipment are complete and in a safe condition; 	Electrical services to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents. All electrical components and circuitry will be tested in accordance with BS[♦] - 16th Edition of Wiring Regulations.

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Component of the Works	Criteria	Tests
	<ul style="list-style-type: none"> • electrical continuity and impedance testing in accordance with 16th Edition of the Wiring Regulations; and • Function tests. 	
General Electrical Services	Setting to work and functional testing to meet design performance.	<p>Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents.</p> <p>Common services - electrical (low and extra low voltage).</p> <p>Continuity of ring final circuit conductors.</p> <p>Resistance of protective conductor.</p> <p>Continuity of bonding conductor.</p> <p>Earth loop impedance.</p> <p>Earth electrode resistance.</p> <p>Cable and Switchgear insulation tests.</p> <p>Operation of RCD and fault operated protective devices.</p> <p>Prospective short circuit current and phase impedance.</p> <p>Electrical Installation tests certificate - final circuits to the 16th Edition of the Wiring Regulations.</p> <p>HTM 2020.</p> <p>Electrical Safety Code for low voltage systems.</p>
HV Services	Setting to work and functional testing to meet design performance.	Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents and HTM 2021 Electrical Safety Code for high voltage systems.
Standby Electric Generating Plant and UPS	<p>Standby electric generators shall provide back up in the event of failure of the incoming supply or component failure.</p> <p>Battery backed UPS systems shall supply critical areas such as theatres, in ITU, CCU, PICU, Burns Unit, laboratory areas and other critical computer controlled equipment to meet functional requirements.</p>	<p>Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents and HTM 2011 Emergency electrical service.</p> <p>Emergency electrical services.</p>

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Component of the Works	Criteria	Tests
Lighting Installation	Setting to work to meet design performance.	Engineering services to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents and in accordance with procedures outlined in the CIBSE Lighting Guide - Hospitals and Healthcare Premises and Derogations.
Emergency Lighting	Setting to work to meet design performance.	Test in accordance with BS[♦].
External Lighting Installation	Setting to work and functional testing to meet design performance.	Compliance with Highways Specification.
Patient/Nurse Call Systems	Operational broadcast points and all speakers operative; points should sound secure; no exposed conductors.	Functional tests and HTM [<i>list relevant HTMs</i>].
Bedhead Services	Setting to work to meet design performance.	Functional testing HTM 2015 bedhead services.
Communal Radio and Television Networks	Setting to work to meet design performance.	Functional testing.
Fire Detection and Alarm Systems	Setting to work to meet design performance.	Functional testing to demonstrate compliance with BS[♦].
Access Control Systems	Setting to work to meet design performance.	Functional testing for security of access and control.
Security Intruder Alarms / Personnel Attack Alarms	Setting to work to meet design performance.	Functional testing for Internal Security.
Closed Circuit Television (CCTV)	Setting to work to meet design performance.	Functional testing for Closed Circuit Television.
Lightning Protection Installations	Setting to work to meet design performance.	Functional testing for Lightning Protections and British Standards.
Lifts	Setting to work to meet design performance.	Safety and functional testing to BS[♦] and HTM 2024.
Pneumatic Tube Conveyor	Setting to work to meet design performance.	HTM 2009: Functional testing as required for compliance with Pneumatic air tube transport systems.
Medical Gases: Oxygen Nitrous Oxide Surgical Compressed Air Medical Compressed Air Medical Vacuum	<p>Medical and Laboratory gases available, vacuum / suction available, anaesthetic gas scavenge systems shall be available at the specified flow rate and pressure defined in the Authority's Construction Requirement at all outlets within the room.</p> <p>Medial Gas</p> <p>Pipelines:</p> <ul style="list-style-type: none"> • flow rate; • pressure; 	<p>Engineering services as commissioned to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents including HTM 2022.</p> <p>Medical Gas, pipelines and systems to be tested in accordance with HM 2022.</p> <p>Purity - BCGA Code of Practise.</p>

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Component of the Works	Criteria	Tests
Medical Gas Alarm System Anaesthetic Gas Scavenging Laboratory Gases Liquid Nitrogen	<ul style="list-style-type: none"> • vacuum; • anti-confusion; and • cleanliness. 	
Public Health	Setting to work to meet design performance.	Functional testing to demonstrate compliance with Above Ground Sanitation Systems BS 5572. Below Ground drainage BS 8301 <ul style="list-style-type: none"> • water / air testing; • pipelines; • manholes; and • CCTV inspection.
Building Management Systems	Setting to work to meet design performance.	Functional testing to demonstrate compliance with Building Management systems - HTM 2005
Renal Dialysis Water Supply	Setting to work to meet design performance.	Specialist manufacturer to carryout function, sterilisation and purity tests.
Structured Cabling: Outlets Outlet Cabling Patch Panels / Cabinets Fibre Backbone (internal) Fibre Backbone (external) Copper Backbone (internal) Copper Backbone (external) Patch cords only As fitted drawings Hub Rooms	Full manufactures warranty for cable installation. Certification and test records for the work carried out.	Structured Cabling to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents. Full manufacturer's warranty for cable installation.
Data Network: LAN Active Equipment Standards of LAN Data Link to existing system	Compliance with HSE and NHS guidance for IMT&T Setting to work, safety and functional testing to meet design performance.	Tests in accordance with Authority Construction Requirements and to TIA/EEE standards.

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Component of the Works	Criteria	Tests
<p>Telephone Systems:</p> <p>PABX Central equipment</p> <p>All system extensions for general telephone use.</p> <p>System extensions for facsimile and modems</p> <p>Switchboard consoles</p> <p>Cordless telephony (incl. Base stations)</p> <p>Paging system and all pagers</p> <p>Call information</p> <p>Logging Equipment</p> <p>PC's for operator consoles only</p> <p>Telephony link to existing systems</p>	<p>Setting to work, safety and functional testing to meet design performance.</p>	<p>Telephone systems to be tested in accordance with the Authority Construction Requirements, for compliance with the Project Documents and supported by a</p> <p>full manufactures warranty for equipment installation.</p>
<p>Noise and Sound Insulation</p>	<p>To be commissioned in accordance with Town Planning requirements, the Building Regulations and the Authority Construction Requirements including:</p> <ul style="list-style-type: none"> • site areas testing; • boundary noise level; • internal room level certification; • performance of partitions etc in respect of privacy standards; • plant room breakout to adjoining spaces; and • noise measurement of all plant areas. 	<p>Completion of acoustics test in accordance with HTM 2045 and 2025.</p>
<p>Content, Layout, Size and Shape of Rooms</p>	<p>Compliance with contents listed on Zone Data Sheets including:</p> <ul style="list-style-type: none"> • Group 1 Equipment and Group 2 Equipment; • clinical services and call systems; • power, LAN, radio, TV, video, telecommunications and transit 	<p>Inspect (%³) rooms to ensure all works are complete and provide the requirements set out in the Zone Data Sheets and 1:50 loaded drawings.</p>

³ Authority to consider % room sampling and ensure % stated here reflects amount stated in Schedule 15.

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Component of the Works	Criteria	Tests
	<p>systems; and</p> <ul style="list-style-type: none"> satisfaction of the standards and performance of design parameters. <p>Compliance with 1:50 loaded drawings.</p>	
Equipment	All Equipment to be supplied and installed in accordance with manufacturer's instructions.	Evidence of test to be in accordance with BS (<i>list relevant standards</i>) and ISO 9000 and manufacturer's recommendations.
Planning Permission	Discharge of Conditions	Written evidence of satisfactory discharge of conditions to be provided evidence of submissions made to the Local Authority for approval of any matters outstanding at Practical Completion.
Highways Works	Section 278, Section 38 works etc	Written evidence of satisfactory completion of any works undertaken in connection with Highways.
Drainage works	Section 104 etc	Written evidence of the satisfactory evidence of completion of drainage to public sewers.
Designers Certificate of Compliance	As Part 3 of Schedule 5 (<i>Certificates</i>) of the Project Agreement	Signed certificate to be provided.
Health and Safety File	To be completed for the Works.	Written statement provided by the Planning Supervisor of the satisfactory provision of information within the Health & Safety File to allow the use and operation of the facility.
Snagging	<p>The Service Provider's detailed snagging list to be provided.</p> <p>Programme for rectification of snagging to be available.</p>	Sample review of the snagging list in conjunction with final room inspections
Design Derogations	Schedule of non-conformance to the Project Documents (e.g. departure from HTM and HBN guidance).	Schedule to be provided identifying derogations and dates agreed with Authority Representative
Maintenance Strategy	Statement for the provision of Hard (and Soft FM) service delivery within the new facilities	Agreed statement provided by the Service Provider to demonstrate FM provider is able to operate the facilities and schedule of any remedial matters to be addressed post Practical Completion
Practical Completion Outstanding Matters	All issues included on Completion Certificates, including balancing and testing of services, snagging matters completion and outstanding works completion.	<p>Evidence to be provided that all matters complete.</p> <p>(%) sample inspection to be undertaken to verify.</p>

Appendix 3: Documentary evidence required to support the Completion Tests

- 1 All Completion Tests are the responsibility of the Service Provider to procure. The documentary evidence in support of the Tests shall include but not be limited to the following:
 - (a) confirmation of Local Authority sign-off of compliance with the Building Regulations;
 - (b) fire Certification and confirmation of compliance with Firecode;
 - (c) the Service Provider's and designers' Quality Plans;
 - (d) details and results of any contamination testing to be carried out by UKAS accredited laboratory;
 - (e) records of tests carried out in the construction and pre-commissioning periods to demonstrate fitness of systems prior to commencement of commissioning;
 - (f) records of examination and testing to confirm that compliance has been achieved and rectification of any non-conformances has been satisfactory undertaken;
 - (g) receipt of manufacturer's test results where applicable;
 - (h) documented results of acoustic room tests;
 - (i) manufacturer's certificate for inspection;
 - (j) [written confirmation of sign-off by the Authority's Infection Control Officer];
 - (k) written confirmation of satisfactory sectional test results;
 - (l) legionellae control compliance certification;
 - (m) records of percentage testing, where required by the Completion Tests in Appendix 2 (*Completion Tests*), carried out in the construction and pre-commissioning periods;
 - (n) Air Handling Unit (AHU) check lists and test sheets including fan and motor details, motor starter overload settings, filter status, motorized damper operation and confirmation of maintenance access facilities;
 - (o) written evidence of satisfactory discharge of town planning conditions;
 - (p) written statement provided by the CDM Co-ordinator of the satisfactory provision of information within the Health & Safety File to allow the use and operation of the Facilities; and
 - (q) Designer's Certificate of Design Compliance (in the form set out in Part 3 of Schedule 5 (Certificates));

- 2 For the avoidance of doubt, where the following Completion Tests make reference to “*In accordance with the, or in compliance with the Project Documents*” this shall mean in compliance with the relevant:
- (a) Zone Data Sheets;
 - (b) 1:50 loaded drawings;
 - (c) Authority Construction Requirements;
 - (d) Service Provider Proposals;
 - (e) Approved RDD Items; and
 - (f) *(Authority to insert any other relevant documents).*