Douglas Carroll
consulting engineers

Project Number: W26-048

VOLUME C

PRICING SCHEDULE

for the

MECHANICAL SERVICES INSTALLATION

for the

Air Conditioning Installation
Seahorse and Orchid Wards at CUH

NOTE: All items shall show a cost, "N/A", "inc." or other text is not allowed

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ITEM	DESCRIPTION	Quantity	Unit Cost	Cost	Section Total
1	**GENERAL**				
1.1	**Preliminaries**				
1.2	To provision of Main Contractor management, supervision and coordination of all trades, subcontractors and specialist works.				
1.3	Provision of coordinated builder's work and coordinated services drawings, including verification of wall openings indicated on the tender drawings.				
1.4	Provision of O&M manuals and As-Built drawings in digital format as per specification, including manufacturer's cleaning instructions for the AC units and controllers.				
1.5	Provision of updated BMS documentation, including points lists and control strategy reflecting the additions and modifications.				
1.6	Demonstration and training of client staff on the complete Hybrid VRF and standard split-system AC installation – allow for 3 visits to suit the hospital's schedule and phased completion.				
1.7	Demonstration and training of client staff on the BMS additions and modifications – allow for 2 days.				
1.8	To liaison and attendance with the Hospital's Maintenance and Ward Personnel for identification of existing services, access arrangements, permits, shutdown planning and coordination of the works.				
1.9	Costs associated with phasing of the works, with Seahorse Ward forming Phase 1 and Orchid Ward forming Phase 2, including phased mobilisation.				
1.10	Costs associated with working within the permitted working hours stated below, including out-of-hours working. **Seahorse Ward (Phase 1):** Start Time: 19:00 hrs Finish Time: 06:30 hrs (Following morning) **Orchid Ward (Phase 2):** Start Time: 20:30 hrs Finish Time: 06:30 hrs (Following morning)				
1.11	Costs associated with maintaining existing services to operational areas throughout the works, including agreed temporary arrangements and reinstatement.				
1.12	To provision of site establishment, welfare facilities, temporary services, security and protection of existing services and finishes.				
1.13	To provision of contractor access arrangements, deliveries, unloading, storage, waste removal and site clearance on completion.				
1.14	To preparation of risk assessments and method statements, compliance with hospital permit requirements and coordination with the appointed PSDP and PSCS.				
1.15	Provide for taking out and maintaining Public Liability and Employers' Liability insurances as required by the contract documents.				

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ITEM	DESCRIPTION	Quantity	Unit Cost	Cost	Section Total
1.16	Provide for taking out and maintaining Contractors' All Risks insurance as required by the contract documents.				
1.17	Provide for all applicable employment-related statutory costs and contributions in respect of all personnel employed on the works.				
1.18	Provide for all costs in respect of personnel for pensions, annual and public holidays and applicable industrial training levies.				
1.19	Provide for all costs in respect of personnel for travelling time, expenses, fares and transport.				
1.20	Provide for all costs in respect of personnel for guaranteed time, non-productive time, overtime, incentive and bonus payments.				
1.21	**General Total**				
2	**SITE WORKS**				
	See Mechanical Drawings 26048-XX-57-L01-DR-DCCE-ME-12001 and 26048-XX-57-L02-DR-DCCE-ME-12002				
2.1	Structural design, supply and installation of supports and bases associated with the mounting of all external condensing units, whether at roof or ground level, including 'Bigfoot type' bases where appropriate, modifications to existing supports as required, fixings, vibration isolation and protection of existing roof finishes where applicable.				
2.2	Supply and installation of approved firestopping systems to all pipework and cable penetrations through fire-rated walls and floors, ensuring the required fire resistance rating is maintained. Includes suitable firestop materials, collars, sealants and associated accessories, together with specialist inspection, certification and sign-off of penetrations and their reinstatement. The specialist shall be engaged by the mechanical contractor and included within their scope of works.				
2.3	Pipework Labelling – Supply and installation of permanent, durable identification labels to all refrigerant and water pipework routes, including clear flow and return identification where applicable.				
2.4	**Site Works Total**				
3	**AIR CONDITIONING INSTALLATIONS**				
3.1	**Hybrid VRF and Standard Split-System Supply & Installation**				
3.1.1	Supply and installation of external condensing units for the Hybrid VRF systems and standard split systems, of rated capacities as specified in the equipment schedule.				
3.1.2	Supply and installation of high-wall indoor units for the Hybrid VRF systems and standard split systems, complete with condensate drain pumps, of rated capacities as specified in the equipment schedule.				
3.1.3	Supply and installation of 4 Way cassette units for the Hybrid VRF systems, complete with condensate drain pumps, of rated capacities as specified in the equipment schedule.				

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ITEM	DESCRIPTION	Quantity	Unit Cost	Cost	Section Total
3.1.4	Supply and installation of refrigerant-to-water Hybrid Branch Controllers serving multiple indoor units, as specified in the equipment schedule. Include independent structural suspension/supports, connection adaptors, maintenance access provisions, HBC drainage and circulation pump. Include expansion vessel sized to suit the confirmed final circuit water volumes, complete with all required connections and accessories, in accordance with the manufacturer's requirements.				
3.1.5	Supply and installation of copper refrigerant pipework between the Hybrid VRF outdoor units and HBCs, including required HBC interconnections and branch refnet joints, together with the 2 No. independent refrigerant circuits connecting the standard split-system indoor and outdoor units. Include all necessary fittings and supports.				
3.1.6	Supply and installation of multilayer pipework between the branch controller and indoor units, including insulation, supports, press-fit type fittings.				
3.1.7	Supply and installation of elastomeric nitrile rubber type, class 'O' tubular insulation to all internal refrigerant pipework, complete with an aluminium foil finish.				
3.1.8	Supply and installation of insulation to all external refrigerant pipework, complete with a GSS cladding finish to provide mechanical protection.				
3.1.9	Diam 15 Supply and installation of Isolating Valves				
3.1.10	Diam 20 Supply and installation of Isolating Valves				
3.1.11	Diam 15 Supply and installation of Non Return Valves				
3.1.12	Diam 15 Supply and installation of Pressure reducer Valves				
3.1.13	Diam 20 Supply and installation of Strainer				
3.1.14	Diam 15 Supply and installation of Drain Valves				
3.1.15	Supply & installation of AAV's				
3.1.16	Supply, installation and insulation of all condensate drain pipework, including dry traps, fittings, supports and connections to suitable drainage points/gully. Include collection and drainage arrangements for outdoor condensing units to prevent water accumulation and potential slip hazards.				
3.1.17	Mains water Pipework 15diam (incl bends, brackets, insulation and labelling)				
3.1.18	Installing, testing and commissioning of Intelligent master Controller icon based, the system must be having following feature - The master controller must be capable of communicating to all ODUs & IDUs, with a override facility, on/off, monitoring etc.. Furnish the detailed action/activity list of master controller.The equipment shall be supplied with IBMS integrator.				

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ITEM	DESCRIPTION	Quantity	Unit Cost	Cost	Section Total
3.1.19	Supply and installation of 2 mm thick galvanised steel perforated cable trays, with perforations not exceeding 17.5% of the tray surface area, for supporting refrigerant pipework. Include supports, fixings, factory-made horizontal and vertical bends, reducers, tees and all necessary accessories. Provide solid galvanised steel top covers to trays carrying external refrigerant pipework.				
3.1.20	PVC FRLS Heavy duty conduit and associated fittings for power cable , Control & Communication cable				
3.1.21	Supply and installation of a wired room controller for local monitoring and control of the indoor unit, capable of communicating room temperature and relevant operating status to the BMS. Include surface-mounted dado trunking for exposed wiring drops to the room controller where required.				
3.1.22	Power Wiring of Indoor and Outdoor Units				
3.1.23	Control Wiring of Indoor and Outdoor Units				
3.1.24	Pressure Testing and commissioning of Refrigerent System				
3.1.25	Pressure Testing and commissioning of Chilled Water System				
3.1.26	Testing, Chlorination and certification of all tie-ins				
3.1.27	Provision of test and commissioning certificates and equipment warranties for the complete Hybrid VRF and standard split-system AC installation.				
3.1.28	**Hybrid VRF and Standard Split-System Installation Total**				
4	**BUILDING MANAGEMENT SYSTEM INSTALLATION**				
4.1	Integration of the Hybrid VRF systems and standard split systems with the existing BMS, including the monitoring and control functions, with room temperature monitoring via room temperature sensors for the standard split systems.				
4.2	Connection and labelling of all associated field devices by the BMS specialist.				
4.3	Allow for all necessary interfaces, including the Hybrid VRF and split system BACnet interface and licence, and modifications to the existing BMS hardware and software to accommodate the AC installation.				
4.4	Allow for programming and configuration of the existing BMS, including graphics, alarms, room temperature monitoring and AC heating and cooling control functions.				
4.5	To any other works not listed above (detail required)				
4.6	To any other works not listed above (detail required)				
4.7	To any other works not listed above (detail required)				

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ITEM	DESCRIPTION	Quantity	Unit Cost	Cost	Section Total
4.8	Testing, commissioning and proving of the BMS additions and modifications, including verification of BACnet communication, monitoring, alarms and AC heating and cooling control functions, in accordance with phased completion.				
4.9	**Building Management System Installation Total**				
5	**OTHER INSTALLATIONS**				
5.1	Allow for isolation and decommissioning of the existing radiant-panel heating serving the rooms provided with AC, including associated pipework and controls alterations and making good. Retain the radiant panels in place.				
5.2	Allow for dust-control measures and segregation of work areas during ceiling removal and AC installation works. No additional specialist IPC/Aspergillus precautions are required for these works beyond the specified dust-control, segregation and cleaning measures.				
5.3	Allow for HEPA-filtered vacuum cleaning of the ceiling void on lifting the tiles and again on completion of the works before reinstatement. Include cleaning of ceiling tiles to ensure they are returned clean and unmarked, wiping down horizontal surfaces affected by dust, vacuuming floors and washing with detergent where required, before handback of each room at the end of each shift.				
5.4	Allow for service openings, sleeves, roof penetrations and weathering, including wall openings to the sizes and locations indicated on the builder's works drawings and all associated making good.				
5.5	Allow for ceiling removal and reinstatement, the Orchid corridor lowered ceiling/bulkhead and maintenance access panels. Include reinstatement of ceilings at the end of each shift before handing the areas back to the hospital.				
5.6	Allow for coordination and agreed alterations to existing services affected by the installation, including associated protection, relocation, reconnection and making good.				
5.7	Allow for specialist removal of the existing asbestos-containing external panels affected by the works, including assessment, appropriate control measures, safe handling and disposal through an appropriately authorised specialist contractor, cleaning, any necessary air monitoring and clearance certification, and provision of waste disposal records, together with replacement with similar fibre cement panels, including all necessary fixings, weather sealing and making good to match the existing installation.				
5.8	Allow for supply and installation of replacement non-asbestos external panels, including submission of proposed panel details for approval prior to installation, associated fixings, weather sealing and making good.				
5.9	Any other items required to deliver the complete works not described above.				
5.10	**Total Other Section**				
	Total Tender Figure Excl. VAT carried forward to main pricing document				

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ITEM	DESCRIPTION	Quantity	Unit Cost	Cost	Section Total
1.0	**Cable Ladder/ Tray/ Trunking System:**				
	See Electrical Specification & Mechanical Wiring Drawings				
1.1	Any Other Item required to deliver complete Cable Ladder/ Tray/ Trunking Installations.	Item	€	€	
	Electrical Contractor comments:				
	Total Cable Ladder/ Tray/ Trunking System, Section (1.0)				**€**
2.0	**General & Emergency Lighting Systems:**				
	See Electrical Specification & Mechanical Wiring Drawings				
2.1	Any Other Item required to deliver complete General & Emergency Lighting Systems.	Item	€	€	
	Electrical Contractor comments:				
	Total General & Emergency Lighting Systems, Section (2.0)				**€**
3.0	**Fire Alarm System:**				
	See Electrical Specification & Mechanical Wiring Drawings				
3.1	Any Other Item required to deliver complete Fire Alarm System	Item	€	€	
	Electrical Contractor comments:				
	Total Fire Alarm System, Section (3.0)				**€**
4.0	**Mechanical Wiring Installation:**				
	See Electrical Specification & Mechanical Wiring Drawings				
4.1	The complete supply, installation, termination & testing of all cabling from existing MCC panels to new AC Units	Item	€	€	
4.2	The complete supply, installation, termination & testing of all cabling associated with Mechanical Systems eg: spurs, fire alarm interfaces etc	Item	€	€	
4.3	Any other Item required to deliver a complete Mechanical & BMS Wiring installations.	Item	€	€	
	Electrical Contractor comments:				
	Total Mechanical Wiring Installation, Section (4.0)				**€**
5.0	**Earthing & Bonding:**				
	See Electrical Specification & Mechanical Wiring Drawings				
5.1	The complete supply, installation, testing and commissioning of a complete Earthing & Bonding Installation	Item	€	€	
5.2	Any other Item required to deliver a complete Earthing & Bonding installations.	Item	€	€	
	Electrical Contractor comments:				
	Total Earthing & Bonding, Section (5.0)				**€**
6.0	**Other:**				

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ITEM	DESCRIPTION	Quantity	Unit Cost	Cost	Section Total
6.1	Any other Item required to deliver a complete installation	Item	€	€	
	Electrical Contractor comments:				
	Total Other, Section (6.0)				**€**
	Total				**€**