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Biomedical Workroom - Renal Dialysis

Room Code	BIOMED-REN
Briefed Area	15.00 m²
Ceiling Height	2.7 m
Occupancy	
Hours of Operation	Available 24 hours

Description

The Biomedical Workroom - Renal Dialysis provides the space, services and amenities for the inspection, testing, troubleshooting, calibration, maintenance and repair of dialysis machines and associated equipment to ensure safe and reliable operation. Depending on the equipment servicing model, the Biomedical Workroom may require access by external service personnel.

Electrical

- [ ] PROTECTION: body protected
- [ ] PROTECTION: cardiac protected

Lighting

- [x] LIGHTING: general
- [ ] LIGHTING: colour corrected
- [ ] LIGHTING: dimmable
- [ ] LIGHTING: indirect

Nurse Call and Duress

- [ ] NURSE CALL SYSTEM: buttons / handset
- [ ] NURSE CALL SYSTEM: annunciator
- [ ] DURESS: fixed
- [ ] DURESS: wireless coverage

Security

- [x] ACCESS CONTROL: to door
- [ ] ACCESS CONTROL: to item / joinery
- [ ] INTERCOM: service communications
- [ ] INTERCOM: security and access control
- [ ] CCTV: camera coverage within room
- [ ] INTRUSION DETECTION: door monitoring
- [ ] INTRUSION DETECTION: spatial monitoring

ICT and Audio Visual

- [ ] AUDIO VISUAL: patient entertainment system
- [ ] AUDIO VISUAL: visitor experience system
- [ ] AUDIO VISUAL: virtual collaboration system
- [ ] AUDIO VISUAL: clinical support system
- [ ] AUDIO VISUAL: digital operating room system

Accessibility

- [ ] AUDIO: hearing augmentation
- [ ] VISUAL: luminance contrast
- [ ] SIGNAGE: accessible, statutory

HVAC

- [x] AIRCONDITIONING: general
- [ ] AIRCONDITIONING: HEPA filtered
- [ ] AIRCONDITIONING: positive pressure
- [ ] AIRCONDITIONING: negative pressure
- [ ] VENTILATION: exhaust
- [ ] VENTILATION: supply
- [ ] VENTILATION: natural

Medical Gas

- [ ] MEDICAL GAS: general anaesthesia
- [ ] MEDICAL GAS: special care
- [ ] MEDICAL GAS: special care, neonatal ventilation
- [ ] MEDICAL GAS: birthing

Hydraulic

- [ ] WATER: drinking
- [x] WATER: specialty
- [ ] DRAINAGE: sanitary
- [x] DRAINAGE: specialty

Fire

- [x] DETECTION: smoke
- [ ] DETECTION: heat

Shielding

- [ ] SHIELDING: ionising radiation
- [ ] SHIELDING: magnetic and radio frequency

Acoustics

SPEECH PRIVACY:
not private ▼ moderate ····· private ····· confidential

NOISE SENSITIVITY:
not sensitive ····· low ▼ ····· medium ····· high

NOISE GENERATION:
low ····· moderate ····· high ▼ ····· very high

Additional Considerations

Planning Context

It is recommended that the Biomedical Workroom – Renal Dialysis be located within the Renal Dialysis Unit and in close proximity to patient treatment areas to facilitate convenient and efficient movement of dialysis machines requiring maintenance or repair.

- The Biomedical Workroom - Renal Dialysis may be collocated with the Plant - Water Treatment (PLNT-WTR) to support technicians to work efficiently between these spaces, particularly where the same vendor is engaged to support both dialysis equipment and the plant room equipment. A door between the rooms providing direct access may be considered and if provided, additional area will be required to accommodate the door and associated circulation space. Hydraulic engineering efficiencies

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may also be achieved where the Biomedical Workroom – Renal Dialysis and Plant - Water Treatment Plant can be collocated, e.g. consolidation of cooling pit for high temperature wastewater.
● This Standard Component indicates four stations (i.e. plumbing connections, power and data) to support maintenance/repair of 2 x haemodialysis machines with direct connection to RO water, 1 x haemodialysis machine with an associated portable RO water machine with connection to potable water, and 1 x home haemodialysis machine with a connection to potable water via a hose connection and a tundish. The number and type of stations required must be confirmed at project level to suit services requirements, including the operational model for maintenance and repair of dialysis equipment, number of back-up machines required to ensure service delivery is not interrupted, provision of dialysis in other units such as the Emergency Department, Intensive Care, Cardiac Care or Inpatient Units, by Renal Unit staff using portable equipment. Each additional station will require 1.5m2 of space to allow for the footprint of the machine(s) and appropriate circulation.
● Once they are inspected, maintained and/or repaired all dialysis machines within the Biomedical Workroom – Renal Dialysis need to be connected to plumbing (RO outlet and tundish) and power as they need to frequently perform automatic disinfection cycles to ensure they are ready for use as needed.

ICT Strategies and Policies
● Connectivity requirements for remote vendor support and updates to operating systems on dialysis machines must be confirmed with the equipment supplier. Power and data have been indicated over the bench to support technicians that bring their own laptops or portable device(s) to perform maintenance/repairs and diagnose issues. Provision of a full computer workstation may be considered at project level, depending on equipment selection and operational model for maintenance and repair of dialysis equipment (e.g. external supplier service contract).

Work Health and Safety (WHS)
● Inclusion of a fixed duress button may be considered depending on the location of the room. This may not be required where the Biomedical Workroom – Renal Dialysis is planned in an area that is only accessible by staff. Mobile duress coverage is to be assessed and planned at a department level and coverage is to meet local security and WHS policies as well as operational service requirements.
● Requirements for provision of personal protective equipment (PPE) and to meet procedures detailed in safety data sheets (SDS) for chemical handling during dialysis machine maintenance, repair, disinfection, etc. are to be confirmed at project level to suit selected equipment and local WHS policies.
● Provision of height adjustable benches or fixed joinery is to be in line with service requirements and local WHS policies. Similarly, any specific approaches to providing flexible and ergonomic workspaces are to be confirmed at project level to suit local WHS policies.

Security
● Proximity card access control has been indicated in this Standard Component. Additional security requirements, such as door force/tamper or spatial monitoring, local or facility level alarms/alerts, CCTV camera coverage within the room and/outside entry to assess cause of alarm, etc., are to be confirmed at project level to suit operational models and security policies. Assessment of risk, identification of response persons and procedures, and integration into Building Management Systems (BMS) will inform requirements.

Storage
● The type, extent and configuration of storage within the room for consumables and chemicals is to suit the size of the system and equipment selected, operation models for keeping sufficient stock on hand, and WHS policies for handling heavy items.

Waste Management
● Size, type and quantity of waste bins will be dependent on service requirements, operational models for waste management and local infection prevention and control (IPC) policies.

Engineering
● High temperature waste water (approximately 90°C) is discharged from the haemodialysis machines after heat disinfection. The hydraulic drainage system is to be designed to accommodate high temperatures and enable cooling of water before it reaches a connection point with the wider drainage system.
● Air-conditioning and ventilation/exhaust are to be designed to accommodate the heat generation the number of dialysis machines to be accommodated within the room as each machine will generate heat when running a disinfection cycle.
● Provision and extent of emergency/standby power and/or uninterruptible power supply (UPS) is to be confirmed to suit services requirements, site conditions and selected equipment. Confirmation of power requirements is to be based on risk assessment considering the impact of a power outage on patient care/safety and medical equipment specifications.

Acoustics

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● The equipment and activities within the Biomedical Workroom - Renal Dialysis may produce a high level of noise. Construction requirements and acoustic treatments for noise control, i.e. ceiling material and finishes, wall material and finishes, door material and seals, floor finishes, etc., are to be confirmed at project level to suit jurisdictional engineering services policies and the acoustic requirements of the adjacent areas.

Finishes

● Finishes to floor and walls are to be robust, suitable for high moisture environments, and resistant to chemicals that are used within Biomedical Workroom - Renal Dialysis.

Doors and Windows

CODE	DESCRIPTION	COMMENT
DOHI-104.01	DOOR: hinged, 1 1/2 leaves, 1400 clear opening, solid	primary entry door; clear opening width to suit operational requirements and anticipated user groups
AFDPR-006.01	*DOOR PROTECTION: plate, to 900H*	*to corridor side, extent dependent on movement of beds and mobile equipment in adjacent area*
AFDPR-006.01	*DOOR PROTECTION: plate, to 900H*	*to room side*
AFDPR-056.01	*DOOR FRAME PROTECTION: full wrap, to 900H*	*optional, provision and extent dependent on frame material/finish and movement of beds and mobile equipment in adjacent area*

Finishes

CODE	DESCRIPTION	COMMENT
FLVY-111	FLOOR FINISH: vinyl, seamless, non-slip	minimum slip rating R10/pendulum P3 or agreed equivalent
FLSK-021	SKIRTING: vinyl, integral with floor vinyl, coved	
WLFI-002	WALL FINISH: paint, clinical areas	
WLFI-011.03	WALL FINISH: vinyl, to 1200 AFFL	
WLFI-101	SPLASHBACK: vinyl	
CLTI-021.02	CEILING: drop-in tiles, prefinished, 600 x 1200	
CLCN-041	CORNICE: wall trim fixing, prefinished	

Joinery

CODE	DESCRIPTION	GROUP	QTY	COMMENT
JOBE-061	BENCH: 750D, laminate	1	1	
JOBE-211	BENCH SUPPORT: bracket	1	1	
JOCU-121	CUPBOARD: wall mounted, double door	1	1	
JOCU-221	CUPBOARD: under bench, double door	1	2	
JOGE-001	BULKHEAD: joinery	1	1	
JOSH-101	SHELF UNIT: wall mounted, adjustable shelves	1	4	

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Fittings, Furniture and Equipment (FF&E)

CODE	DESCRIPTION	GROUP	QTY	COMMENT
FIDI-106	DISPENSER: PPE, disposable gloves, wall mounted	2	1	
FIDI-231	DISPENSER: paper towel, wall mounted	2	1	to basin
FIDI-241	DISPENSER: alcohol-based hand rub, wall mounted	2	1	
FIDI-256	DISPENSER: soap, wall mounted	2	1	to basin
FIDI-261	DISPENSER: soap, antimicrobial, wall mounted	2	1	to basin
FQWS-051	BIN: general waste, 20L	3	1	to basin
FQWS-073	BIN: recycling, commingled, 50L	3	1	size, type and quantity of waste bins will be dependent on service requirements and operational models for waste management
FQWS-233	BIN: clinical waste, 50L	3	1	size, type and quantity of waste bins will be dependent on service requirements and operational models for waste management
HYBA-121	BASIN: type B, handwashing	1	1	with removable shroud to pipework; location of thermostatic mixing valve to be determined based on ability to share with nearby basins
HYBA-301	SINK: single bowl	1	1	
HYTP-067	TAPWARE: basin, tap set, wall mounted, lever handles	1	1	selection of basin and tapware should be coordinated to ensure compatibility
HYTP-182	TAPWARE: sink, tap set, wall mounted, lever handles	1	1	
HYTP-421	TAPWARE: hosecock, wall mounted	1	1	for home haemodialysis machines
MMGE-381	MACHINE: dialysis	3	2	
MMGE-386	PROCESSOR: water treatment, dialysis, reverse osmosis (RO), mobile	3	1	

Engineering Services

CODE	DESCRIPTION	GROUP	QTY	COMMENT
ELGP-231	GPO: double, emergency power, wall mounted	1	9	
HYDR-157	TRAP: cooling pit, with sealed lid	1	1	
HYGE-081	WALL BOX: renal dialysis, integral tundish, with 1 water supply connection and 1 drain connection	1	2	for haemodialysis machines
HYDR-104	*TUNDISH: in wall, with viewing panel*	1	*2*	*Sub item to HYGE-081*
HYDR-201	*DIRECT CONNECTION: wastewater, general*	1	*2*	*Sub item to HYGE-081*
HYTP-458	*DIRECT CONNECTION: water, reverse osmosis (RO)*	1	*2*	*Sub item to HYGE-081*
HYGE-082	WALL BOX: renal dialysis, integral tundish, with 1 water supply connection and 2 drain connections	1	1	for portable RO machines and associated haemodialysis machines
HYDR-104	*TUNDISH: in wall, with viewing panel*	1	*1*	*Sub item to HYGE-082*
HYDR-201	*DIRECT CONNECTION: wastewater, general*	1	*1*	*Sub item to HYGE-082*
HYDR-201	*DIRECT CONNECTION: wastewater, general*	1	*1*	*Sub item to HYGE-082*
HYTP-451	*DIRECT CONNECTION: water, cold*	1	*1*	*Sub item to HYGE-082*
ITIN-016	OUTLET: data, single RJ45, wall mounted	1	3	optional, for dialysis equipment operational testing and maintenance
ITIN-026	OUTLET: data, double RJ45, wall mounted	1	2	

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