



Linear Accelerator Treatment Room

Room Code	LINAC
Briefed Area	165.00 m ²
Ceiling Height	3.0 m
Occupancy	1 patient; up to 4 staff
Hours of Operation	8am to 6pm, Mon - Fri (dependent on unit operating hours)

Description | The Linear Accelerator Treatment Room provides space and facilities for the treatment of patients requiring external beam radiation therapy (EBRT). A collocated Control Room is required for the remote operation of equipment.

Electrical | PROTECTION: body protected ☒
PROTECTION: cardiac protected ☐

Lighting | LIGHTING: general ☒
LIGHTING: colour corrected ☐
LIGHTING: dimmable ☒
LIGHTING: indirect ☐

Nurse Call and Duress | NURSE CALL SYSTEM: buttons / handset ☒

HVAC | AIRCONDITIONING: general ☒
AIRCONDITIONING: HEPA filtered ☐
AIRCONDITIONING: positive pressure ☐
AIRCONDITIONING: negative pressure ☐
VENTILATION: exhaust ☐
VENTILATION: natural ☐

Additional Considerations

- Cable pathways for services between the Control Room, Modulator Room and Treatment Room must be established and coordinated prior to construction and developed based on vendor and physics requirements. Equipment is to be installed to manufacturer's specifications with sufficient clearances for maintenance access.
- The Treatment Room must be adequately shielded to ensure that radiation doses to surrounding areas do not exceed radiation dose limits and satisfy design/dose constraints, including the provision of a maze entry or shielded door. Radiation shielding is to be as advised by a qualified Radiation Consultant to suit the practice, workload and equipment procured, and all shielding on the Standard Component is indicative only.
- The modulator may need to be accommodated within the Treatment Room. If so, this will be concealed by a wall, with a door for access. Depending on the quality of the power supply at a site, a power conditioner may be required and is typically located with the modulator. Additional noise from this equipment should also be accounted for with acoustic treatment.
- Visibility of the Treatment Room from exit and via observation cameras is required to ensure all persons are clear of the room before treatment commences. A last person out button is to be provided, as well as a sensor gate and/or physical gate at the entry of the maze. A Beam-On/Off light system is required at the entry to be illuminated when treatment begins/ends.
- Additional medical gases may be provided (including additional oxygen, additional suction, nitrous oxide and scavenge) depending on clinical requirements such as the provision of anaesthetic services.
- Acoustic requirements will vary depending on the equipment procured and its proximity to the patient treatment area. For patient and staff comfort, acoustics should be considered to reduce the impact of noise from the equipment.
- Dimmable lights are to be provided and are to be placed to avoid glare to patients.
- Back lit ceiling artwork may be installed for patient comfort and speakers and connections should be provided to allow music to be played and controlled individually for each bunker.
- Air conditioning is to be provided to control the room temperature and humidity to meet the equipment suppliers requirements; high equipment loads shall be accounted for. Air conditioning equipment shall be located outside of this room with ductwork to be installed to follow the entry maze with any penetrations considered to ensure radiation protection. Where possible, it is preferred that ductwork in the ceiling is designed to the perimeter of room for future flexibility to provide ceiling mounted equipment.
- Cooling shall be provided to the linear accelerator equipment in the form of chilled water to meet the suppliers requirements, independent chiller equipment is preferred.
- The need for and extent of emergency power and UPS must be reviewed to suit site specific requirements. Small UPS units are normally required as a minimum to support control and operating equipment. In some cases, these are supplied with the medical

equipment. Other emergency power and UPS requirements to be confirmed based on risk assessment considering the impact of a power outage on patient care/safety.

- A mix of respiratory gating, surface guidance, motion management and/or patient position technologies may be provided depending on clinical/service requirements. The provision of these technologies is to be confirmed by the project and may have additional requirements including additional power/data, water cooling, heat load, possible increased set down, increased number of trenches/conduits, space requirements for computer cabinets in control room and additional penetrations through the suspended ceiling. Requirements to be confirmed with vendors.
- Allow sufficient distance between the isocentre of the machine and primary shielding wall for the flexibility to provide specialised treatments, e.g. Total Body Irradiation (TBI), depending on service requirements.



Doors and Windows

CODE	DESCRIPTION	COMMENT
DOSP-202	GATE: hinged, 1 leaf, 900 clear opening	[DWGE-013]



Finishes

CODE	DESCRIPTION	COMMENT
FLVY-103	FLOOR FINISH: vinyl, seamless, standard slip resistance, static dissipative	[FLVY-001] floor finish must be minimum slip rating R10; Pendulum P3 or agreed equivalent to extend under basin or inset section of non-slip vinyl required
FLSK-021	SKIRTING: vinyl, integral with floor vinyl, coved	[FLSK-010]
WLFI-001	WALL FINISH: paint	[WLWA-004]
WLFI-011.01	WALL FINISH: vinyl, to 900 AFFL	[WLWA-022]
WLFI-101	SPLASHBACK: vinyl	[WLWA-007] to basin
CLFS-011	CEILING: flush set, suspended	[CLFS-005]
CLFI-003	CEILING FINISH: paint, sterile areas	[CLFS-005]
CLTI-022.02	CEILING: drop-in tiles, acoustic, prefinished, 600 x 1200	[CLTI-002] inset area above machine as required
CLCN-031	CORNICE: square set	[CLCN-008]
WLPR-006	WALL PROTECTION: corner guards	[WLPR-006]



Joinery

CODE	DESCRIPTION	GROUP	QTY	COMMENT
JOBE-031	BENCH: 600D, laminate	①	3	[FIJO-058]
JOCU-201	CUPBOARD: under bench, single door	①	1	[FIJO-140]
JOCU-221	CUPBOARD: under bench, double door	①	3	[FIJO-135]
JOGE-001	BULKHEAD: joinery	①	2	[FIJO-212] plasterboard bulkhead is also acceptable
JOSP-031	JOINERY UNIT: bespoke, radiotherapy, tall, applicator storage	①	1	[FIJO-165] custom joinery is required for vendor specific electron cones, including sliding rails, shelving to be reinforced for electron shields
JOSP-032	JOINERY UNIT: bespoke, radiotherapy, tall, horizontal patient device storage	①	3	[FIJO-166] wide span shelving to be reinforced
JOSP-033	JOINERY UNIT: bespoke, radiotherapy, tall, vertical patient device storage	①	2	[FIJO-167]
JOSP-041	JOINERY UNIT: bespoke, radiotherapy, wall mounted, laser enclosure	①	3	[FIJO-231]



Fittings, Furniture and Equipment (FF&E)

CODE	DESCRIPTION	GROUP	QTY	COMMENT
FIDI-106	DISPENSER: PPE, disposable gloves, wall mounted	②	1	[FIDI-014]
FIDI-181	DISPENSER: cleaning wipes, wall mounted	②	1	[FIDI-006]
FIDI-231	DISPENSER: paper towel, wall mounted	②	1	[FIDI-025] to basin
FIDI-241	DISPENSER: alcohol-based hand rub, wall mounted	②	1	[FIDI-001]
FIDI-256	DISPENSER: soap, wall mounted	②	1	[FIDI-030] to basin
FIDI-261	DISPENSER: soap, antimicrobial, wall mounted	②	1	[FIDI-031] to basin
FIHR-101	BRACKET: suction bottle, wall mounted	②	1	[FIHR-019]
FIHR-111	BRACKET: sharps bin, wall mounted	②	1	[FIHR-016]
FIHR-214	BRACKET: computer display screen, single, articulated, ceiling mounted	②	2	[FIHR-004]
FIHR-322	BRACKET: keyboard and mouse, fixed height, wall mounted	②	1	[FIHR-093]
FIHR-331	BRACKET: display screen, single, fixed, wall mounted	②	1	[FIHR-006]
FIHR-411	BRACKET: patient monitor, articulated, wall mounted	②	1	[FIHR-067]
FQCL-211	LINEN CARRIER: dirty, single skip	③	1	[MMGE-048]
FQCL-251	TROLLEY: clean linen, small	③	1	[MMGE-110]
FQWS-003	BIN: sharps, clinical, medium	③	1	[FQCW-044]
FQWS-051	BIN: general waste, 20L	③	1	[FQCW-016] to basin
HYBA-121	BASIN: type B, handwashing	①	1	[HYBA-010]
HYTP-067	TAPWARE: basin, tap set, wall mounted, lever handles	①	1	[HYTP-037]
ITAV-141	MICROPHONE: AV system, ceiling mounted	①	2	[ITAV-010]
ITAV-152	SPEAKER: AV system, ceiling recessed	①	2	[ITAV-057] for patient's own music, individual to each bunker from control room, hearing loop required to speakers
ITCL-351	DISPLAY SCREEN: patient treatment information	①	1	[ITNE-073] wall mounted
ITCL-351	DISPLAY SCREEN: patient treatment information	①	1	[MMRA-013] radiotherapy information, ceiling mounted
ITCL-431	CAMERA: patient observation, ceiling mounted	①	6	[ITCL-012 + FIHR-077] 1 x optional, for total body irradiation or visualisation of additional monitoring equipment, pan, tilt and zoom (PTZ) capability is required, quantity to be based on equipment and service requirements
ITNE-101	COMPUTER: single display screen, central processing unit (CPU), keyboard and mouse, desktop	③	1	[ITNE-007] workstation on wheels is also acceptable
ITNE-121	COMPUTER: single display screen, all-in-one	③	1	[ITNE-066]
ITNE-201	INPUT DEVICE: keyboard and mouse	③	1	[ITNE-067] to wall mounted computer, may be wireless
MMGE-191	CANNISTER: suction bottle	③	1	[MMGE-100]
MMRA-031	SENSOR: entry detection, light curtain, radiotherapy bunker,	①	1	[MMRA-012]
MMRA-041	LASER: patient positioning, radiotherapy, overhead	②	1	[MMRA-015]
MMRA-044	LASER: patient positioning, radiotherapy, lateral, MRI compatible	②	2	[MMRA-016]
MMRA-046	LASER: patient positioning, radiotherapy, sagittal, MRI compatible	②	1	[MMRA-017]
MMRA-106	DEVICE: tester, radiotherapy, daily QA	③	1	[MMRA-011]
MMRA-191	ACCESS PANEL: penetration, medical physics port	①	1	[MMRA-006]



Major Medical Equipment (MME)

CODE	DESCRIPTION	GROUP	QTY	COMMENT
MMRA-001	RADIOTHERAPY DEVICE: treatment, linear accelerator	2	1	[MMRA-004]
MMRA-071	DEVICE: surface guided radiation therapy system, ceiling mounted	2	3	[MMRA-008 + FIHR-089] as required for respiratory gating / motion management / surface guidance systems, to suit service requirements



Engineering Services

CODE	DESCRIPTION	GROUP	QTY	COMMENT
ELGP-136	GPO: single, emergency power, ceiling mounted	1	1	[ELGP-123]
ELGP-136	GPO: single, emergency power, ceiling mounted	1	12	[ELGP-125] 1 x to ceiling mounted laser, 1 x optional, to additional patient observation camera if provided
ELGP-231	GPO: double, emergency power, wall mounted	1	4	[ELGP-223]
ELGP-231	GPO: double, emergency power, wall mounted	1	5	[ELGP-220.1] to wall mounted lasers
ELPR-071	RCD: residual current device, wall mounted	1	4	[ELPR-006]
ELSW-001	SWITCH: light	1	2	[ELBO-010]
ELSW-021	SWITCH: light, dimmer	1	1	[ELBO-012]
ELSW-121	BUTTON: emergency stop, wall mounted	1	4	[ELBO-001]
ELSW-131	BUTTON: last person out	1	1	[ELBO-019]
HYDR-201	DIRECT CONNECTION: wastewater, general	1	1	to basin
HYTP-451	DIRECT CONNECTION: water, cold	1	1	to basin tapware
HYTP-453	DIRECT CONNECTION: water, warm	1	1	to basin tapware
ITCL-181	BUTTON: nurse call, staff assist, with cancel, wall mounted	1	1	[ITCL-008]
ITCL-191	BUTTON: nurse call, emergency, with cancel, wall mounted	1	1	[ITCL-004]
ITIN-011	OUTLET: data, single RJ45, ceiling mounted	1	11	[ITIN-011] 1 x optional, to additional patient observation camera if provided
ITIN-016	OUTLET: data, single RJ45, wall mounted	1	3	[ITIN-016]
ITIN-026	OUTLET: data, double RJ45, wall mounted	1	1	[ITIN-026]
LIFX-192	LIGHT: feature, backlit panels, ceiling mounted	1	2	[LIFX-038]
LIFX-214	LIGHT: illuminated sign, beam on/off	1	1	[LIFX-004]



Medical Services Panels and Pendants

CODE	DESCRIPTION	GROUP	QTY	COMMENT
Panel 1				
MMSP-051	MEDICAL SERVICES PANEL: wall mounted	1	1	[MMSP-026]
ELGP-146	GPO: single, emergency power, on services panel	1	3	[ELGP-122]
ELPR-083	RCD: residual current device, emergency power, on services panel	1	1	[ELPR-006]
ITIN-025	OUTLET: data, double RJ45, on services panel	1	1	[ITIN-025]
MGAS-042	OUTLET: oxygen (O2), on services panel	1	1	[MGAS-042]
MGAS-062	OUTLET: suction, on services panel	1	1	[MGAS-062]

CODE	DESCRIPTION	GROUP	QTY	COMMENT
MGFP-041	FLOWMETER: oxygen	3	1	[MGFP-004]
MGFP-061	ADAPTER: suction	3	1	[MMGE-002]

For guidance on how to use the Room Data Sheet, please visit the [AusHFG website](#).